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EDINBURGH

A MEDICAL JOURNAL,

COMBINING
THE BOSTON SOCIETY FOR
THE MONTHLY JOURNAL OF MEDICINE
APR. 7TH 1888
THE EDINBURGH MEDICAL AND SURGICAL JOURNAL.
MEDICAL OBSERVATIONS.

VOL. XXXII.—PART I.

JULY TO DECEMBER 1886.



EDINBURGH:
OLIVER AND BOYD, TWEEDDALE COURT.
LONDON: SIMPKIN, MARSHALL, AND CO.

MDCCCLXXXVII.

RECEIVED
CATALOGUED,
J. H. B.

4/7/88.

EDINBURGH: PRINTED BY OLIVER AND ROYD, TWEEEDDALE COURT.

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THE
EDINBURGH
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Part First.

ORIGINAL COMMUNICATIONS.

I.—CLINICAL AND PATHOLOGICAL MEMORANDA.

By BYROM BRAMWELL, M.D., F.R.C.P. (Edin.), Assistant Physician to the Edinburgh Royal Infirmary; Lecturer on the Principles and Practice of Medicine, and on Practical Medicine and Medical Diagnosis in the Extra-Academical School of Medicine, Edinburgh; Additional Examiner in Clinical Medicine in the University of Edinburgh, etc.

In this and subsequent communications, I propose to detail a series of clinical cases and pathological observations which are, I think, of sufficient interest and importance to warrant publication.

I.—Case of Calcareous Degeneration of the Cerebral Vessels.

An advanced degree of calcareous degeneration of the minute cerebral arteries and capillaries—a change quite distinct from ordinary atheroma—is in my experience rare. It is said by some authorities to be not uncommon in lunatics, more especially in general paralytics; but Dr Bevan Lewes, who has probably examined more brains than any other living British histologist, tells me that he has very seldom seen it. The best marked example of the disease which has come under my own observation occurred in the person of a patient whom Dr Watson kindly asked me to see with him a short time ago.

At the time of my visit, the patient, M. A., æt. 36, who at one time had been a robust and very muscular man, was suffering from one of those intercurrent febrile attacks which so frequently occur towards the termination of prolonged cases of organic nervous disease. Emaciation was extreme; motor weakness very great, though there was no definite localized paralysis; memory very much impaired; and speech, though not aphasic, markedly deranged,

apparently as the result of feebleness and inco-ordination of the tongue and speech muscles. The pupils were equal and contracted. There were some fibrillary twitchings, both of the facial and limb muscles. There was no evidence of localized, "coarse," cerebral disease, nor of organic disease of any of the great viscera of the chest or abdomen.

The patient died shortly after I first saw him, death being apparently due to implication of the cardiac and respiratory centres in the medulla.

Dr Watson has kindly given me the following account of the early history of the case:—"I saw Mr A.," he writes, "for the first time some fifteen years ago. He then had an attack of violent neuralgia affecting the vertex, accompanied with some pericranial thickening and tibial nodes. There was a distinct history of syphilis. The pain was very severe, but yielded to blistering and iodide of potassium. He had recurrent attacks of this neuralgic condition at long intervals. He had an attack of choroiditis during this period of his illness. About three years ago, he suffered from affection of sight and weakness in the limbs, followed by a gait and speech which suggested intoxication. The symptoms were accompanied by mental impairment, affecting memory, with paroxysms of violent excitement. The case made progress slowly by the recurrence of repeated attacks of cephalalgia, excitement, and impaired muscular power; with the impairment of speech his writing became affected, and, as you remember, death resulted from interference with cardiac action and respiration."

At the *post-mortem examination* the head only was examined. The skull-cap was thin, and presented no evidence of the previous periosteal thickening. The dura mater was natural; the pia and arachnoid were in places opaque, and here and there adherent to the surface of the convolutions, which were markedly atrophied. The brain was, independently of the atrophied condition, the result of disease, small; compensatory sub-arachnoid fluid was in considerable excess. On section, the brain tissue, both white and grey matter, was anæmic. On cutting across the cerebellum, several of the small arteries projected above the surface of the section like little pieces of rigid stick.

On *microscopical examination*, the minute bloodvessels (arteries and capillaries), more especially those of the cerebellum, were seen to be magnificent examples of calcareous degeneration. The capillaries were thickly studded with minute, highly refractile, calcareous spherules, and resembled the beaded stalks of the ice plant more than any other object with which I am acquainted. (These refractile spherules did not stain either with picro-carminic or osmic acid, and effervesced on the addition of sulphuric acid.) The walls of the smallest arteries were thickly infiltrated with similar deposits, which here and there had run together, and

formed large calcareous droplets. In many of the arteries, a little larger in size, the middle and (?) inner coats were completely infiltrated, a rigid cylinder of calcareous matter being, as it were, placed within the intima; in the process of mounting these calcareous cylinders were frequently broken, the cracks, as seen under the microscope, closely resembling the cracks in a piece of broken glass. The calcareous change was well seen in sections of the cerebellum, but was best demonstrated by drawing out the vessel from the brain tissue, staining with picro-carmin, and mounting in Farrant's solution. The gray matter throughout the brain was markedly degenerated, the nerve cells being in places atrophied and highly pigmented, and the neuroglial tissue, more especially on the surface of the convolutions, markedly increased in amount.

The calcareous changes in the vessels are well represented in the following Plate, and are copied from some of the specimens shown at the March meeting of the Medico-Chirurgical Society of Edinburgh.

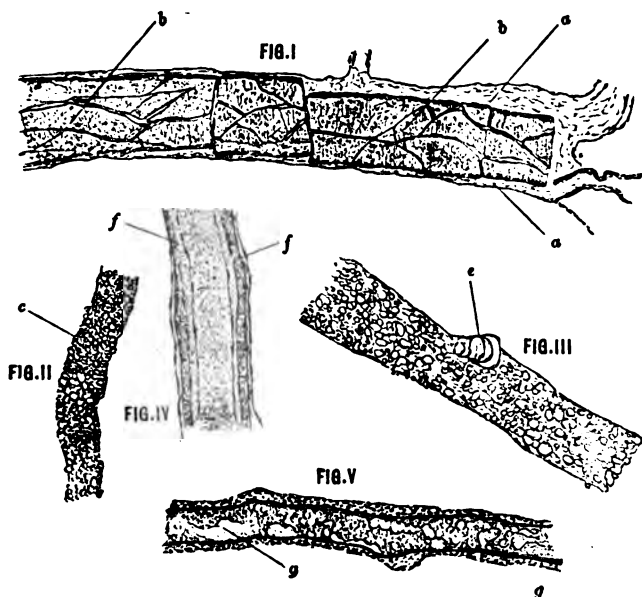


FIG. 1.—Camera Lucida Drawing of a Small Artery of the Cerebellum affected with Calcareous Degeneration. (X Hartnack, obj. 4, oc. 3, and drawing reduced from 6 to $8\frac{1}{2}$ inches.) a, Outer coat of the vessel; b, b, Calcareous cylinder, which completely ensheaths the vessel, and has been cracked in the process of mounting.

FIG. 2.—Calcareous Capillaries studded all over with Calcareous Particles, c.

FIG. 3.—Capillary affected with Calcareous Degeneration (X Hartnack, obj. 8, oc. 3, drawing reduced from $8\frac{1}{2}$ to $1\frac{1}{2}$ inches); the letter e points to a large calcareous droplet; the remainder of the vessel is thickly studded with calcareous particles.

FIG. 4.—Small Artery affected with Calcareous Degeneration. The middle coat, f, is markedly affected; the inner coat also seems involved, and the whole vessel is infiltrated with small calcareous granules which are omitted from the drawing, except at the lower part of the figure (low power).

FIG. 5.—Small Artery affected with Calcareous Degeneration (low power). The nuclei of the outer coat are in marked excess; the middle coat contains large masses (g, g,) of calcareous material.

II.—*Case of Aneurism of the Basilar Artery; Meningeal Hæmorrhage; Immediate Coma; Death in Fourteen Hours.*

A. B., æt. 36, a fat, short-necked man, suddenly became insensible during the act of sexual intercourse, and then vomited violently. Dr George Mackay, who was immediately summoned, finding the breathing stertorous, the pulse very quick and wiry, and the head and neck turgid and cyanotic, abstracted a considerable quantity—probably between 20 and 30 oz.—of blood from the arm. After the venesection there was marked improvement in the character of the pulse, and the lividity to some extent disappeared. When I saw the patient—an hour after the onset of the attack—the coma was still profound, and the breathing stertorous; vomiting frequent and severe; tracheal râles were loudly audible; the pupils were equal and contracted;¹ there was no distinct evidence of localized paralysis, rigidity, or spasm, all four limbs being flaccid; the contents of the rectum had been freely evacuated; fluids could not be swallowed.

On inquiry, the patient's friends informed us that three weeks previously he had an attack of giddiness, and that on more than one occasion he had, for a few moments, suddenly lost the power of speech, the memory of locality, and of the names of his near relatives.

The patient was a temperate man, and had not, so far as could be ascertained, had syphilis.

Cold was applied to the head, but there was never any sign of improvement; death took place about fourteen hours after the onset of the attack.

On post-mortem examination, which was made on 26th January 1886, a small quantity of clotted blood was found at the base of the brain, and a thin layer of fluid blood diffused over the surface of each hemisphere beneath the arachnoid; the fourth ventricle was filled with blood; and a clot, the size of an almond, was situated in the descending cornu of the left lateral ventricle.

A round aneurism, the size of a pea, projected from the termination of the basilar at its division into the two posterior cerebral arteries (see Fig. 6). The walls of the aneurism were very thin and transparent, and at one spot had ruptured by a pin-point opening. There were no appearances of embolism or atheroma in any of the cerebral arteries; but, on microscopical examination, localized patches of periarteritis were found on the basilar and other vessels.

Remarks.—The rupture of an aneurism of a large cerebral artery is by far the most common cause of non-traumatic meningeal cerebral hæmorrhage: the basilar and middle cerebral arteries are the vessels which are most frequently affected. Cases of this kind are

¹ Dr Mackay tells me that during the course of the case the pupils were sometimes contracted, at others of medium size.

comparatively rarely met with in hospital, but are more frequent in private practice. Amongst at least 1000 post-mortems which I must have made in the Tynemouth Union Workhouse Hospital, the Newcastle-on-Tyne Infirmary, and the Edinburgh Royal Infirmary, I can only recall two cases in which meningeal cerebral hæmorrhage resulted from this cause, while in a very much smaller number of private post-mortems I have met with three cases of this kind. The comparative rarity of this condition in hospital practice is doubtless due to the facts: that the rupture usually occurs suddenly, and often in comparatively young persons, who may not have manifested any previous indications of cerebral disease; and that, in the great majority of instances, death occurs within a few hours after the onset of the attack—before, in short, there has been time to remove the patient to hospital. In some cases, as in this one, the onset of the coma is sudden and immediate; in others, as in the case which I shall next relate, slow and gradual.

The most remarkable feature about this case was the very small amount of blood which was extravasated. The onset was so sudden, the coma so profound, and the death so rapid, that I expected to find a much larger extravasation. The severity of the symptoms was doubtless due to the extravasation into the fourth ventricle, and the resulting pressure upon the pons and medulla; and in this connexion it is interesting to note the contracted condition of the pupils and the very violent character of the vomiting. Why such a comparatively large quantity of blood should have made its way up into the fourth ventricle I am unable to explain. It is reasonable to suppose that the abstraction of blood from the arm may have helped to limit the amount of the cerebral extravasation; and there can be little doubt that the marked improvement in the condition of the pulse which followed the venesection was due to a temporary relief of the increased pressure within the cranium, and that the operation was so far distinctly beneficial.

III.—Case of Aneurism of the Right Middle Cerebral Artery; Rupture, attended with Sudden Pain in the Head and Vomiting; gradual onset of Coma and Left Hemiplegia four hours after the Accident; rapid development of Cheyne-Stokes' Respiration; Death from failure of the Respiration six hours after the Rupture.

Miss A., æt. 40, who had for a few days before her illness been suffering from bronchial catarrh, but who had not complained of her head or of any serious symptoms, and who had never had

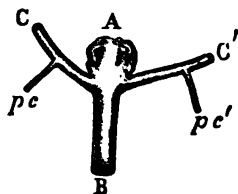


FIG. 6.—Aneurism of the Basilar Artery. A, aneurism; B, basilar artery; C, C', posterior cerebral arteries; pc, pc', posterior communicating arteries, which in the dried preparation, from which the figure was copied, have become twisted backwards.

rheumatism, was seized, at 10.30 A.M. on 7th February 1886, while dressing for church, with pain in the head and a "queer sensation of fulness of the veins of the head and neck." She vomited two or three times, complained of feeling faint and ill, and lay down.

Her sister, who noticed that she was pale and looked ill, was in no way alarmed, for she (Miss A.) had previously suffered (though not lately) from attacks of sickness and faintness. Her sister stated that the patient was quite sensible, able to speak without any difficulty, could move all her limbs, and was completely free from twitchings, spasms, or convulsions.

She remained in this condition until 1 P.M. She then asked if the doctor had been sent for, saying that she felt queer and ill, and that she had never felt like that before. At 2.30 P.M. she became insensible. At 2.45, when seen by Dr Milne Murray, she was partly comatose, lying on her left side, the right hand resting against the chin, and the legs flexed on the abdomen. When loudly spoken to she seemed to rouse partly, attempted to speak, and rubbed the right side of her face with the right hand, but did not make any other movement. About this time the urine was discharged involuntarily.

When seen by me at 3.45 P.M. she was lying on her right side, the legs partly flexed upon the abdomen, the right hand placed against the right side of the mouth and chin. She several times moved the right hand in what appeared to be a voluntary manner; and when roused or touched, rubbed the right eye and right side of the face, as if to get rid of some source of irritation. A few moments after I arrived the coma appeared to become more complete.

On examination it was found that the face and eyes were slightly twisted to the right, the left arm was much more flaccid than the right, and the hand (when compared with the right hand) markedly purple and cyanotic. The left leg was more flaccid than the right, but there was not the same amount of difference (as regards tonicity) between the two legs as there was between the two arms.

On touching the right conjunctiva strong reflex contraction of the right, and very marked contraction of the left, orbicularis muscle resulted. On touching the left conjunctiva hardly any reflex contraction, even in the left eye, was obtained; in other words, the left orbicularis could be readily thrown into reflex contraction by stimulating the right (opposite) conjunctiva, but could hardly be made to contract at all by irritating the conjunctiva of the same (left) side. The *pupils* were equal, of medium size, and sensible to light.

The *plantar reflex* was lively in the left leg, very feeble in the right. The knee-jerk could not be obtained in either leg, but the right quadriceps extensor muscle could be felt to contract after a blow on the patellar tendon much more distinctly than the left.

The *pulse* was 84, regular, and of good strength; the *respirations*

26, and beginning to assume the Cheyne-Stokes' character; the temperature in the right axilla was 98°·4 F., while that in the left was 99°·2 F.

The patient was unable to swallow. Bronchial râles were audible all over the chest; the pulmonary second sound was accentuated; the heart seemed natural.

At 4.5 she was loudly spoken to and roused slightly. She attempted to speak and to sit up, but again quickly fell back insensible.

Cheyne-Stokes' respiration now developed to an extreme degree. The left arm and hand were for a few minutes affected with tonic spasm, the fingers being bent into the hand and the arm strongly flexed at the elbow. A few spasmodic (clonic) twitchings in the right hand and arm then occurred, and were markedly more pronounced during the deep inspirations (period of dyspnoea in the Cheyne-Stokes' cycle).

At 4.15 she was blue in the face, and frothed at the mouth.

At 4.20 the respiration finally ceased, the pulse being 86, full, and of good strength.

At 4.28 the pulse was still regular and of good volume.

At 4.29 the heart was heard through the stethoscope to falter, and at 4.30 P.M. (exactly six hours after the onset of the attack), it suddenly ceased to beat.

At the post-mortem examination, which was made on 8th Feb., a large black clot, fully the size of the closed fist, was found in the right fissure of Sylvius, surrounding the convolutions of the island of Reil. The blood appeared to have been slowly poured out, for it was hemmed in on all sides by the surface of the convolutions, distending, as it were, the deeper parts of the sulci, and had not broken through the membranes onto the outer surface of the hemisphere; the membranes were extensively separated from the surface of the brain, the large clot being situated between the membranes and the brain tissue.

A smaller clot, about the size of a small egg, was situated in the left Sylvian fissure. A thin layer of blood, partly fluid and partly clotted, was spread over the base of the brain and the surface of both hemispheres, the blood being apparently situated in the subarachnoid space. A small clot, the size of an almond, was found in the fourth ventricle, and there was a small quantity of fluid blood in the fourth and in each lateral ventricle. On careful examination, after macerating the bloodvessels and the clots which surrounded them in water frequently changed, a small aneurism about the size of half a pea was found on the right middle cerebral artery at its point of division into its different branches (see Fig. 7). The walls of the aneurism were exceedingly thin, and were ruptured at one point. The arteries at the base were unusually thin and transparent; there was not a trace of atheroma, and microscopical examination failed to detect any

evidence of periarteritis, or, indeed, of any other lesion of the arterial coats. At the seat of the aneurism there seemed to be a localized collection of corpuscles, apparently indicative of a localized periarteritis.

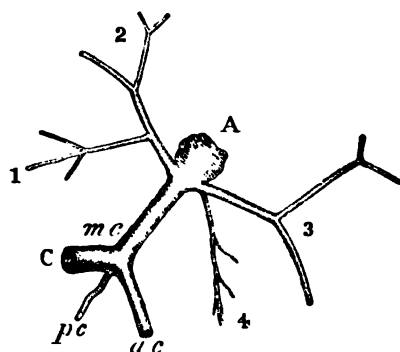


FIG. 7.—*Aneurism of the Middle Cerebral Artery.* A, aneurism; C, internal carotid; mc, middle cerebral; ac, anterior cerebral artery; pc, posterior communicating artery; 1, 2, 3, 4, branches of the middle cerebral artery.

There was no appearance of an embolism. The heart was healthy, the left ventricle being in no way hypertrophied.

The examination was made hurriedly (the brain being taken home for careful examination), and the kidneys were not examined, but there is no reason to suppose that they were diseased; the history of the case, and the condition of the bloodvessels and of the left ventricle of the heart, render it certain, I think, that there was no cirrhosis. The lungs and liver were healthy, and there is no reason to suppose that the patient had had syphilis.

Remarks.—This case presents many points of great interest and importance.

The occurrence of an aneurism in a healthy person, whose arteries were free from disease is, in the absence of embolism and any of the other (usual) causes of aneurism, noteworthy.

The very definite manner in which the attack commenced, the comparatively long period (four hours) which elapsed before the coma and hemiplegia were developed, the subsequent rapid progress of the case, the typical character of the Cheyne-Stokes' respiration, and the very remarkable manner in which the heart continued to beat for nine minutes after the respiration had completely stopped, constitute a clinical picture of great interest, and are all satisfactorily explained by the sudden rupture of the aneurism, the slow extravasation and collection of blood in the right Sylvian fissure, the occurrence of a more rapid bleeding after the effort to sit up, with a rapid increase of the intracranial tension, pressure upon the medulla, and interference with the action of the respiratory centre.

The condition of the conjunctival reflex was remarkable, and, so far as I know, has not been previously described. The reflex closure of the eyelid was scarcely perceptible, it will be remembered, when the conjunctiva of the left (paralyzed) side was irritated, but was readily in conjunction with the reflex closure of the right eyelid when the conjunctiva of the right (un paralyzed) side was touched with the finger.

It was hardly possible, under the circumstances, to determine the exact cause of this condition. Theoretically it might have been due to:—

1. *A lesion of the sensory part of the reflex arc* (the left fifth nerve).—Whether there was any loss of sensibility in the area of distribution of the left fifth nerve (including the left conjunctiva) could not be ascertained in consequence of the comatose condition of the patient. There was certainly no post-mortem evidence of localized pressure or any other condition which was likely to interfere with the conducting power of the fifth nerve on the left side.

2. *A lesion of the motor part of the reflex arc, or of the reflex centre* (seventh nerve, or seventh nerve nucleus, on the left side).—There seemed to be no evidence in favour of this explanation. There was, it is true, some paralysis of the muscles supplied by the left facialis, but it was slight, and apparently due to the pressure of the blood-clot upon the “facial centre” in the cerebral cortex of the left hemisphere; there was no evidence, either clinical or pathological, in favour of the view that the facial paralysis was peripheral. There was no appearance of localized pressure upon the left facialis, or of any lesion of the pons or medulla; while the fact that the left orbicularis muscle could be made to contract by touching the right conjunctiva showed that there was no obstruction to the passage of reflex impulses in the motor nerve trunk.

3. *Inhibition of the reflex centre*.—It is, of course, a matter of everyday observation that in cases of hemiplegia the superficial reflexes, are, as a rule, abolished or diminished on the paralyzed side, in consequence, it is generally supposed, of the inhibition of the lower reflex centres in the spinal cord,¹ but I know of no case in which unilateral abolition of the conjunctival reflex, on the side of the paralysis, has been observed.

The possibility that the conjunctival reflex may be diminished or abolished on one side in cases of hemiplegia as a result of inhibition of the reflex centre should be kept in view in the

¹ Dr Ross takes a different view, and supposes that a diminution of the cutaneous reflexes under such circumstances is caused probably by a loss of tone of the muscular fibres distributed to the skin, which prevents the papilla being properly exposed to the irritation of tickling, and other cutaneous stimulants.” (*Handbook of Diseases of the Nervous System*, page 176.)

investigation of future cases, for the facts of this particular case hardly, I think, warrant any positive conclusion on the point.

If, however, future observations should support the view that the abolition of the conjunctival reflex, which was noted in this case, was produced in consequence of this mode of inhibition, the fact that irritation of the conjunctiva of the right (non-paralyzed) side was followed by closure of both eyelids (contraction of the orbicularis on the diseased as well as on the sound side), it must, I think, be concluded that in this case, at all events, the facial nerve nucleus on the right side was *directly* connected with the orbicularis of both eyes; in other words, that a reflex impulse excited by stimulating one (say the right) conjunctiva, in order to produce contraction of the opposite (say the left) orbicularis, did not require to travel through the nerve nucleus on the left (see Fig. 8), but only through that on the right side (see Fig. 9). A somewhat different arrangement from the intercommunication of the nerve nuclei theory which Dr Broadbent has advanced, and which accounts for the speedy recovery of automatic (not highly specialized) muscular movements in cases of hemiplegia.

FIG. 8.



FIG. 9.

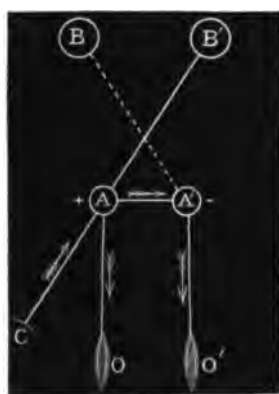


FIG. 8.—Diagram of the Conjunctival Reflex, the Reflex Impulse being supposed to pass to the Orbicularis Muscle on each side through the Nerve Nucleus. A, A', nerve nuclei of the facialis (reflex centre), that on the right side (A) being in a condition of +; that on the left side (A') in a condition of —, in consequence, of a lesion in the right cerebral hemisphere, which inhibits the superficial reflexes; B, B', right and left cerebral hemispheres; C, conjunction on the right side, from which the reflex impulse passes through (A), the nerve nucleus on the right side, to O, O', the orbicularis muscle on both sides.

FIG. 9.—Diagram of the Conjunctival Reflex, the Reflex Impulse passing from one Conjunction to the Orbicularis Muscle on each side, through both nerve nuclei. The letters have the same signification as in Fig. 9.

The turgidity and lividity of the left (paralyzed) hand, and the fact that the temperature of the left axilla was nearly a degree higher than that of the right (99°·2 F. and 98°·4 F. respectively), show that pressure on the cerebral cortex may produce in man very marked vasomotor disturbances—a fact which has, I believe, been

experimentally demonstrated by several observers on the lower animals.

I am not acquainted with any series of observations of the temperature conditions on the two sides of the body in cases of hemiplegia resulting from non-traumatic meningeal hæmorrhage, but this case seems to show that the temperature alterations are not exactly the same as in hemiplegia due to intra-cerebral hæmorrhage, in which, as a general rule, the temperature is lower on the paralyzed than on the sound side *immediately* after the accident. (See Redard's admirable recent work *Traité de Thermométrie Médicale*, page 466 *et seq.*)

I regret that I have no note of the condition of the fundus oculi, but some omissions could hardly be avoided, for the time which the patient was under observation was very limited, and much of it was necessarily and rightly occupied with communicating with the patient's friends, and in endeavouring to fulfil the other requirements which a consultation in such a painfully rapid case necessarily demanded.

II.—THE LIFE WORK OF PROFESSOR JAMES SPENCE— THE HARVEIAN ORATION. DELIVERED AT THE ROYAL COLLEGE OF SURGEONS, APRIL 12, 1886.

By JOHN A. MACDOUGALL, M.D., F.R.C.S. Ed., Carlisle, President of the
Harveian Society.

GENTLEMEN—FELLOW HARVEIANS,—My first duty is to thank you very warmly for the distinction you have conferred upon me in electing me to the office I have to fill to-day. It is an honourable office by reason of the brilliancy and the great gifts of the men who have been my predecessors, and by the distinguished position of many in the audience to whom it is my privilege now to speak.

Our meeting commemorates—as our Society by its existence is meant to commemorate—the name of the immortal Harvey, a name which, although nearly three centuries have elapsed since he who bore it lived, and laboured (and died), is still cherished by the profession to which he belonged as that of one of the most distinguished of her sons. And this is not to be wondered at when we call to remembrance (as it has been so often and so well told to you) the story of his life, of the times in which he was born, of the dark beliefs of those days, of the difficulties with which he had to contend, and of the great work it was given him to do,—a work which has since proved the grand foundation upon which much of our best knowledge has risen, and the record of which will ever be held in grateful reverence while medicine remains a science.

It is not my object, then (by such words as are mine), to endeavour to keep fresh the glory of a name which will never grow dim.

Such effort were needless on my part—Harvey's example, Harvey's method, and Harvey's teaching will ever remain as models of what is best and highest in our art. Time has proved this, for time is surely the strongest test of reality.

As I have already said, his story has been often told, its reiteration has done much to render to us, the far-off generations, his personality and his influence strong and pronounced; but it has done more, for as "the history of the world is largely the biography of great men," so is the life of Harvey one of the chiefest chapters in the history of medicine,—a history with which each one of us should have more or less acquaintance.

Further, there can be no doubt that as the great men of a nation have always done much to create the nations they represent, so in like manner men such as Harvey may be said to be the creators and the best representatives of the profession to which we belong. For reasons such as these we Harveians cherish lovingly the strong term "immortal" prefixed to his name by the College of Physicians in his own time. The days of hero-worship have, therefore, not yet ended, nor, indeed, as its high priest Thomas Carlyle predicts, "ever will, for loyalty and sovereignty are everlasting in the world." Believing, then, as I do strongly, that the story of the lives of great men and the work they did in them is ever a profitable subject for consideration, and that we cannot look, even if very imperfectly, upon earnest and faithful work without gaining something by it, I have chosen to speak to you this evening of the life work of one who once spoke from the chair which I now occupy, who to some few here was a life-long friend, who to many was a revered and valued teacher, and who was known to all by the honoured name he bore,—I refer to James Spence.

Difficult, I know, is the theme I have set before me, for I speak to those who, with greater and wider surgical knowledge than I have, are the more able to appreciate and appraise the lessons he has taught us; but I find courage in the feeling that I speak of him in the hall of the College of which he was so distinguished a Fellow, where the lengthening of memories in common will be welcome to many, and where, perchance, a short notice of what we surgeons owe to him may tend to perpetuate the remembrance of his worth with those younger members, who in the ranks are now keeping step behind me.

Of his life, apart from his professional labours or of his personality, I will say little. Time, the fell destroyer of the cherished possessions of memory, as of all else that surrounds us, can scarcely yet have dimmed with many of you the vivid impression which as a teacher, a surgeon, and a man he created; for to me, to whom it happened that from the time I crossed the Border until the day of his death I saw little of him, it remains that through the dimness of the ten years and more that have passed since then, and all that has happened in them, I can still recall at will his image,

his kindly bearing, and the ways that were his. The tallish, slightly stooping figure, the slow semi-swinging walk, the rather pronounced features, with their thoughtfully anxious, half-sad expression, and the scrupulous neatness of his dress, how well they are all remembered, and how inseparable any one of them is from memory's picture of the man!

It has sometimes occurred to me that the sad expression of his face, so untrue an index with him of his real nature, which had much genial humour in it, may have been a result of the uphill work of his earlier years, of the anxiety he ever had in the duties of his life, and the fact that after all, and despite the talents he possessed, the vigour of his days was somewhat spent ere he attained the position he had for so long a time previously so undeniably deserved. But it is as a surgeon, and with reference to the benefits he conferred upon his art, that he is of chiefest interest to us now.

The two primary factors in all individual development may be truly reckoned as heredity and environment,—the one, powerful certainly in its influence, exerts its power apart from a man's volition, for he has no choice in the parentage that may be his; but the other, and it seems to me in a large majority of instances the stronger in its issue, moulds and develops as much through capacity and adaptability as by conscious will and effort. So far as I know, heredity played no marked part in the surgical development of James Spence, but that environment must have done so seems indisputable; for at the time he began his studies Robert Liston and Robert Knox were great teachers, James Syme in Minto House was rising into fame, while among his contemporaries were such men as John Goodsir, John Reid, James Duncan, and Richard Mackenzie.

Mr Spence began his professional life in Edinburgh—for at this point I elect to take up the record of his achievement—as an assistant-demonstrator in the University under Prof. Munro, and in this position he remained for seven years. Then it was that by assiduous and careful work he laid the foundation of that perfect knowledge of surgical anatomy which in the after years of his life so pre-eminently distinguished him. Although he has left valuable evidence that regional anatomy was not his only care, and has proved how capable he was of dealing with the subject in other aspects, there can, I think, be little doubt that surgery was his first mistress, and that his devotion to the sister science was in large measure due to the inseparable relation, which in a practical aspect especially, there exists between them. That the well-trained head and hand of the demonstrator are the most valuable early possessions of the surgeon is indisputable.

In 1841, so far as I can discover, he gave forth the first fruits of his thoughts and of his labours. This in the shape of a most interesting and important contribution to the *Edinburgh Monthly*

Journal of Medical Science, and entitled "Remarks on the Sources of Hæmorrhage after Lithotomy."¹

The reasons which led him to this investigation are in a measure characteristic in many ways of the man. Lithotomy must even then have excited his keenest interest; for it is evident that he had so thoroughly mastered the literature of the subject, and especially that part of it relating to the occurrence of hæmorrhage during its performance, that he made bold to challenge the published statements of Liston, and to refute them not only by direct anatomical proof, but by the citation of a large number of cases which had occurred in the practice of some of the greatest surgeons of that time. And the thorough way in which he did his part of the work is demonstrated by the fact, that in the course of his research he made no fewer than seventy-three examinations, and that by it he proved that the danger of wound of the internal pudic lay in the use of such instruments as the cutting gorget, the beaked knife, and the lithotome caché; and that in six cases the accessory pudic lay in such relationship with the prostate that by very free incisions of the pelvic fascia and neck of the bladder, it might have been wounded. That the inferior hæmorrhoidal and the superficial perineal artery might in certain circumstances also prove the source of considerable hæmorrhage he shows; but his chiefest contention, and that to which, owing to the remarks of Liston, his attention was chiefly directed, was as regarded the risk of wound of the artery of the bulb. It was held by that great master in surgery that wound of this vessel arose from want of care, and that if the incision was placed low and the knife used cautiously in the deep incision, the vessel would be safe whether it followed its usual course or not. Mr Spence found, however, that in six cases operated upon by three different methods, that in one but a few lines separated the vessel from the deep incision, that in other instances it lay little more than an inch in front of the anus, therefore in a position of the highest danger; while in several cases, from irregularity in its distribution, it was impossible to avoid cutting it. Again, and this was, may be, the most important observation in the paper, he pointed out the special danger which may arise in some cases in which the prostatic artery gains the perineal surface of the gland as an unbranched trunk; for in eight cases in which this occurred, its calibre was as large as that of the artery of the bulb. Nor did the anatomical arrangement and the large size of the prostatic veins in the aged escape his practical observation; for he shows how ever and again they may, when of necessity divided, prove a source of dangerous hæmorrhage. That in after years he learned to dread them in another relationship we will hereafter discover. The outcome of this paper was conclusive; for it proved that in eleven cases out of seventy-three dissections, there occurred such arterial irregularities as must of necessity have given rise to hæmorrhage however carefully lateral lithotomy had been performed.

¹ March 1841, p. 157.

In the following year, and in the pages of the *Edinburgh Medical and Surgical Journal*,¹ he gave good evidence that it was not in its surgical bearing alone that he had interest in anatomy; for despite the memorable researches of John Reid, or it may have been in consequence of them, Mr Spence made "Inquiry into the Anatomy of the Eighth Pair of Nerves." In this he proves that the vagus has a non-ganglionic part from its root passing over the superior ganglion, that the filaments he describes unite below the ganglion with the internal branch of the spinal accessory, and that the pharyngeal branch of the vagus is the result of this union. This was an important anatomical discovery; it was the means of throwing light on some discrepancy in physiological observation, and it was one of which too little note has been taken.

In the same year in which he published this important anatomical contribution he left the University and became a teacher of anatomy in Surgeon Square. There he laboured successfully and arduously for four years; and of the way in which he did his work I am enabled, through the kindly pen of a cotemporary, to tell you:—²

"His part in the School lay in the dissecting-room, and in giving a considerable share of the supplementary lecture-room course, then known in Edinburgh as the Demonstrations. When his turn came to appear in the lecture-room he was always more than well received; his dissection was invariably nicely made; he spoke easily, and with the earnestness of a man who was master of his subject and believed in it; stuck to his text, and maintained the proprieties of the lecture-room. There was no pomposity, though that we could forgive for the good teaching that went with it. . . . Spence was always listened to with respect, and was a most successful lecture-room teacher.

"While at home in all parts of anatomy, it was his exposition of the surgical region, such as the parts concerned in hernia and lithotomy, the neck, and the parts involved in operations on the great arteries, the tendons concerned in club-foot and the like, which most impressed the class, and left an enduring recollection of the teaching and of the man. To hear Spence on Scarpa's or Collis's fasciæ, or on the pelvic fascia, on lithotomy, or on tying the subclavian or carotid were things to which the students ran with eagerness. It was the highest anatomy going in Edinburgh at that time (as, indeed, the surgical aspect must always be as the *sine qua non* in a medical school), and Spence certainly inspired the students with interest in it."

This is a happy picture, sketched by a loving hand, of the admirable work he did in these early days of his career as a teacher; and it is interesting to note how, based on the intimate anatomical knowledge he had then acquired, his future fame largely rested; for, as I shall endeavour to demonstrate to you, the direction in which his originality shines forth most conspicuously is in

¹ April 1842.

² *Edinburgh Medical Journal*, July 1882, p. 92.

the surgery of the head and neck, of the parts connected with Scarpa's and the pelvic fasciæ, and of the arteries.

Forty years have passed away since James Spence ceased to demonstrate anatomy, and he and, I doubt not, the greater part of those who looked upon his work have left us; but there still remains to us and to the generations following lasting evidence of how his fingers were fashioned, how delicate was their touch, and how capable they were in executing the work to which they were trained. Although it is more than a quarter of a century ago, and when I was a High School boy, I yet remember a Saturday spent in the Museums of our College; and although, and of necessity, then quite unable to estimate in any wise the value or the importance of the things I saw, some lasting impressions remain with me, and three of them connected with the handiwork of him of whom I am now speaking. A hand and a foot in clearest outline, and yet all that remained to represent their soft parts was a network of red tubes, marvellous many of them in their delicacy and their intercommunication. The arteries in the neck of the dog shown in the same beautiful way also impressed me, and I have a belief that from that day I date my happy knowledge of the name of Mr Spence. It was but natural that the man, the nicety of whose handiwork was thus manifested, should become a great operating surgeon. Even his step to a lectureship in surgery was not a direct one, for he had an intermediate stage in which he taught special parts of surgery.

But his time had now nearly come, and in 1849, having obtained his Fellowship, he began in a locality well known to many of us, the High School Yards, to give a systematic course. That he had then acquired a very considerable experience of surgical practice upon which to found his teaching we know; for in the pages of the *Monthly Medical Journal* there appear, from 1842 onwards, many valuable papers from his pen. Here, again, we find the forecast to which I have already made reference; for the subjects upon which he chiefly wrote—and doubtless because they were of highest interest to him—are on “The Ligature of Arteries,”¹ “On the Irregularities in Arteries,”² “On Hernia,” and on the anatomical condition of stumps long after amputation.³ In the discussions at the Societies he was now also taking a part, and among some other very decided positions he assumed is one of opposition to ovariectomy.⁴

His foot was now fairly on the ladder to fame, and with his appointment to the Infirmary in 1851, he may be said to have become fully recognised as the coming surgeon of Edinburgh.

His lifework from this point is in the knowledge of many who are here assembled; and as from its greatness in extent and in

¹ *Monthly Medical Journal*, June 1843, p. 501.

² *Ibid.*, August 1845, p. 577.

³ *Ibid.*, July 1849, p. 931.

⁴ *Ibid.*, January 1846, p. 65.

value it is impossible to deal with it in its entirety, I will only venture to discuss a few subjects in which his teaching is of highest importance, in order to manifest to you his primary character as a surgeon, and the debt that we, the members of the surgical profession, owe to him.

Of the many ways in which he attained pre-eminence in his art, one of the chiefest was his marked success in operative surgery. That this was largely due to the serious business that he made of all his work, and to his unceasing and conscientious attention to detail, admits of little doubt.

None of us who had the privilege of working with him but will ever remember the care with which his patients were examined, and the treatment to which they were subjected prior to operation; how especial attention was devoted to ascertaining the condition of the kidneys; and how, without, as I believe, any intimate knowledge of auscultation, he would occasionally examine pulmonary organs, regarding the state of which he had any material doubt. Family history, previous history, and predisposition were all inquired into, and it was notable how closely he could on such information found a correct prognosis.

But the care thus lavishly bestowed was not limited to the sufferer, his surroundings were also matters engaging his earnest attention. A long time before the influence of germs and an aseptic atmosphere was discussed, before, I believe, the great discussion upon Hospitalism, Spence had found how much his success depended on the hygienic state of his hospital wards, and having noted that many of the causes of atmospheric vitiation were cumulative in character, he was in the constant habit of clearing out a ward at short intervals, having its walls and furniture thoroughly washed and fumigated either with chlorine gas or sulphurous acid fumes, and afterwards all the windows kept open for thorough ventilation. Pure mortality had probably comparatively little to do with the development of his practice in this especial direction, for I take it that the state of the wounds under his care often excited suspicion and anxiety apart altogether from the graver issue of life or of death.

Prof. Humphry has well said "that the treatment of wounds is undoubtedly not merely the first stone, but also the corner stone of surgery," and therefore to Mr Spence they were a subject of the highest interest and importance, and although in the later days of his life the discussion of the value of antiseptics and antisepticism entered of necessity into his teaching, I am not sure they were ever regarded by him as indispensable in the practice of good surgery. The reasons for this were not difficult to seek, for at a time when other surgeons following the same method he had practised so long—the method, in fact, of such masters as Liston and Syme—were but moderately successful, thanks to the personal care he bestowed upon his patients, their wounds were well managed, they were

kept at rest, and they were kept clean, so that speedy union and a satisfactory recovery were the outcome.

The lessons experience had taught him—for a man exercising such care as he did is singularly ready to learn such lessons—had made him in these earlier times use such precautions as we, the surgeons of to-day, would reckon it most culpable to neglect. His sponges were always clean, his instruments were always bright, he was as particular as regarded the appearance of his hands as he was in the matter of his dress, and he thus avoided, what doubtless at times happened to those who as capable were less careful, the direct contamination of a wound at the time of its infliction. The thorough arrest of hæmorrhage, the painting of the wounded surface with iodine or a chloride of zinc solution, the dependent angle left without a stitch, it might be with a bit of guttapercha tissue inserted in it, secured sufficient drainage, and the light dressing easily and painlessly removed enabled his ever watchful eye to note such changes in the part as told the tale of its well, or it might be its ill-being. Through means such as these, traumatisms did well in his hands; and thus it was that when the ardent followers of antisepticism, vaunting may be too loudly its powers, proclaimed for it such results as had not often previously been recorded, he, conscious of the success that had been his, and confident in the means that had led to it, declared his opposition to it, and in unmistakable language advanced the reasons why he doubted the correctness of the theory upon which it was based, and the necessity for its adoption.

However much we practising surgery, but lacking greatly in comparison with him in surgical gifts as in richness of experience, owe to the genius and the teaching of Sir Joseph Lister, there can be no doubt that Mr Spence had, in the results he could record, good ground for maintaining the opinion he held as to the unnecessary use of antiseptic dressings. Some years ago, when the increased expenditure of the Royal Infirmary, owing to the cost of the practice of antiseptic surgery, became matter for consideration by its board of management, and when they for their guidance procured from the Hospital books a record of the success of each individual surgeon, it was found that the results obtained by Mr Spence with his simple and inexpensive dressings fell little short of those attained by the then Professor of Clinical Surgery.

Although he was strongly conservative in his principles and in his treatment, he was never blindly so, for it happened that in the end, either recognising some virtue in this new doctrine, or influenced by the feeling that it was his duty as a surgical teacher to practise it, he did adopt it, and in the last few years of his work he employed it in such form as seemed to himself safest and best. His results as he records them are not, however, by its adoption strikingly improved upon, for I find that among the cases of amputation thus treated there is almost as high a mortality as in those managed in

the old ways. He states that he has had "excellent results in excision of tumours and similar operations, although not more successful as regards life than by other methods." In this connexion, however, the feeling must have come to him that these are the very cases, that without antiseptics, but with careful management in the complete arrest of hæmorrhage, and by the use of well-applied dressings, heal, as a rule, in the most satisfactory way. In excision of joints he found the apparently rapid healing of the wound was not always a gain—for it was not a guarantee of healing through its whole depth—and for cogent reasons, as he puts them, he was dissatisfied with the special dressings necessitated in cases of amputation. Therefore it was that with that honesty of purpose which always possessed him he developed a plan of his own—a plan, I may say, especially as regards the management of stumps—closely akin to that followed by his friend, the late Mr George Callander.

Viewing his results in this light, it is but natural that he who still practises, with the primary rigidity of its rules, the application of antisepticism in surgery, should cavil at the method employed; but I take it that it is but another proof of the keen insight of Mr Spence, when we find that much of that which was reckoned of highest importance by others—the spray, to wit—has been abandoned, and that with many of the best and most successful surgeons of our time there is a gradual approach to the simplicity of the old gospel, of which he was ever a disciple—the gospel of cleanliness.

The principle upon which the practice of antiseptic surgery is founded is an invaluable gift to our art, but it is most valuable to him, who, lacking the ability and the experience of a great master, lacks with them the capacity which they bring, and which, regarded as a personal possession, is the surest bulwark against the preventible calamities of surgery. That Spence was one of the few men who might dare to act without its help in its fullest development, his long record of success amply demonstrates.

In the large bulk of traumatisms there is breach of surface, and inasmuch as in a certain proportion of such cases, treat them as we may, reparative action does not follow, I may well here, in connexion with the subject of wounds, make mention of traumatic gangrene. On the treatment of this condition there is not perfect unanimity among surgeons, for some contend that the old rule, founded on the teaching of Larrey, as to immediate amputation without waiting for a line of demarcation should not hold good, but that rather should it be, that we ought, except in a limited number of cases, not to operate at all.

Mr Spence's doctrine is clear on this point, and I cannot but feel that were the rules he has tabulated concerning it more widely known and more frequently acted upon, there would be less hesitancy in giving, and giving early, to many a patient the best chance that is his.

In common with every hospital surgeon he had large experience in the treatment of fractures, and the methods by which he managed them are, as a rule, as simple as they are successful. To only one of them would I make reference, and that one the arrangement by which he contrived to use without disadvantage the hooks of Malgaigne in fracture of the patella. If his method was more frequently employed, we would have fewer cases in which treatment by wiring may prove of service. To avoid such necessity is of much moment, for despite what has been written in favour of this operation, it is one which, in the hands of the majority of surgeons, is undeniably fraught with danger. His recommendation of primary amputation in cases of compound dislocation of the ankle occurring in those who have much passed the meridian of their life is also noteworthy, for it is the advice of one who, ever striving to do the best for his patient, found, as the result of a well-considered experience, that in some circumstances you aid him most surely by following a line of practice to which all surgeons do not subscribe.

When noticing the work done by him in his earlier days, I made reference to his dissection of arteries, and the evident interest this special topic had for him; and here, before considering the opinions he held on the important subject of aneurism, I desire to draw attention to certain original observations of his, which, I believe, have had not only an important connexion with the results of his operations upon bloodvessels, but which will ever remain with his pupils as a notable part of the inheritance he has left them. Especially does it become us, as Harveians, to have interest in this matter, for the observations and experiments of him whose name we perpetuate, formed, I believe, the basis upon which the genius of John Hunter was able to found what has proved to be, mayhap, the very greatest advance ever made in the science of surgery.

It was in 1785 that Hunter first tied the femoral artery for popliteal aneurism—a procedure which of necessity attracted greatly the attention of surgeons to the effect of the ligature when applied to arteries. The experiments of Dr Jones early in the present century did much to unfold and to explain the vital changes by which obliteration of the vessel was brought about, but it was not, I believe, until the investigations of Mr Spence were published that the fact was realized that the effusion of lymph external to the coats of the constricted vessels played an important part in the process of effacement and the safe separation of the ligature. True, Pouteau had noticed the closure of the vessel by means of the condensation which took place around its extremity, but he misread its meaning, and formulated upon this misreading a dangerous practical deduction. To Spence is the credit due of demonstrating how essential to success this part of the process is, how it is brought about, the steps by which it progresses, and the advantageous results which follow it. The experiments by which

he proved this are full of interest, and are apt examples of how thorough and conscientious a worker he was.

Other light, too, he has given us, for he proves that the presence of the mere blood-clot, far from holding the position which Petit ascribed to it, is not an essential to successful obliteration; and in support of this statement he draws attention to these points, that in some of his experiments in which no secondary hæmorrhage occurred, there were no blood-clots in the vessel, and that the importance of its existence has been over-estimated owing to the term "coagulum" being frequently applied to the true plastic effusion which is always present, and which is essential to success. Fully aware of all that had been done in this association, it had not escaped his notice that Dr Parry, when treating of the process of anastomosis after ligature, had advanced the belief that certain new vessels are formed in order that this might be adequately brought about. Doubt, however, on this point was his, and by very careful injection and dissection he was able to disprove the assertion, and to show that what had been taken for new vessels "were but portions of the enlarged inosculations of previously existing vessels of the sheath with the *vasa vasorum*."

The bent and the gifts of the labourer were, however, so eminently practical, he was so truly one of those whose farsightedness enables them to grasp at principles through close attention to details, that the result of his anatomical and physiological observations had always an intimate and valuable connexion with surgery. And so it was now, for having ascertained as much by experiment as experience, how well-nigh impossible it was for nature unaided to seal the wound in a large artery, he taught in the strongest way the practice of securing the wounded vessel at once, and thus avoiding the risks of what some surgeons consider should happen ere operation be undertaken, the occurrence of consecutive hæmorrhage. This is in many cases a by no means difficult proceeding, and, as a rule, is attended by the happiest results.

The circumstances are, however, different when we come to deal with the ligature of a vessel in its continuity. Then so largely does success depend upon the skill of the surgeon, that Spence never wearied in reiterating the lines upon which the operation should be performed, and the development of which he admitted were largely the outcome of experience gained in his experiments upon the arteries.

Always desirous of the formation of that plastic effusion of which he had so thoroughly proved the value, and knowing that it had origin, not only in the vessels of the sheath, but also in the vessels of the surrounding tissues, he impressed upon all the care to be exercised in the limited separation of the sheath, and in the avoidance of unnecessary disturbance of the parts in close relation, lest the occurrence of suppuration should either prevent the formation of or destroy the already formed lymph. This was but half

the lesson, for as he had proved it to be essential to the safe closing of a vessel that the textures in its neighbourhood and the tissues of the artery itself should have considerable vitality, he was of opinion that in certain cases in which from sloughing a large vessel had been opened into, that it was not sufficient merely to tie the artery at the point at which it had given way, but that for safety another ligature should be placed on its continuity nearer the heart.

Here he comes into opposition with the well-known dictum of Guthrie, and it is of interest to note that the case he narrates to support the value of his teaching is in its history very similar to that of Mackenzie, who, observing the practice now advocated by Spence, incurred, in this celebrated work upon *Injuries of the Arteries*, the severe criticism of the distinguished military surgeon. In either case, whether we deal with the artery in healthy surroundings, or when alterations in its vitality add to the anxiety and the difficulty attendant upon our proceedings, it is essential for the proper formation of the lymph, upon which so much depends, that the blood which supplies it, and through whose influence its vitalization and ultimate development is to be effected, should be of good quality, and therefore it is that we are told by Mr Spence how much success may hang upon the careful after management of the patient.

Apart from the changes in those portions of the artery to which the ligature is actually applied, there is the important consideration of the alteration which it produces on the lumen of the vessel in its immediate neighbourhood. Dr Jones had stated in his summary of the effects of tying an artery, that one is "to produce indirectly a complete obliteration, not only of the canal of the artery, but even of the artery itself, to the collateral branches on both sides of the parts which have been tied." This statement some preparations made by Mr Spence entirely disproves, and conversely, that the actual extent of obliteration seldom exceeds an inch and a half to two inches, showing, therefore, that this is all the space which nature absolutely requires for the safe closure of an artery after ligature.

The interpretation of the value of this observation is not difficult, for it teaches that if in any given vessel you can have such a distance as is here specified free from collateral vessels, then there is every probability that you will succeed in obliterating it by ligature. The knowledge thus acquired also enabled the demonstrator, by an interesting line of argument, to arrive at the conclusion that in vessels near the centre of the circulation, provided the space between the collateral branches was sufficient for the purpose of effacement, their very presence might, by dividing the blood-current, and thus lessening the force of the cardiac impulse, prove an aid in the process.

The accuracy with which his observations were made enabled him to draw from them many and valuable practical deductions,

and thus it is that he has still something to teach us beyond the local effects of the ligature on the bloodvessel involved.

It had long been matter of observation that pain in the limbs was apt to follow deligation of their main vessels, and the alteration produced in the vascularity of the nerves passing to them, and brought about by the first step in the process of anastomosis, was reckoned the proximate cause of this. That this is so there can, I take it, be little doubt; but in other situations, and especially when certain pulmonary symptoms followed interference with the circulation in the carotid, it was thought that another explanation was necessary. This was found in the supposition that the aneurism for which the operation had been undertaken increased rapidly in size, and by direct pressure interfered with the functions of neighbouring organs; in the fact that for the time being the cerebral circulation was disordered, and the action of the pneumo-gastric probably disturbed; and lastly, in the idea that owing to the lost balance in the circulation, consequent on the obstruction of so large a vessel, the lungs became congested.

This last proposition is ably supported in a valuable paper by the late Prof. Miller; and while admitting that there is weight in his argument, Mr Spence contends that the increased vascularity in the sheath of the vagus and its surroundings, and the lymph effusion which takes place at the seat of ligature, are in themselves quite adequate to explain all the phenomena observed, and the accompanying lesions described. Remembering his work in earlier days, and his investigations on the eighth pair of nerves, he is able to state that all the symptoms and pulmonary changes which have been found in this connexion can be produced with equal certainty by irritation or injury of that important nervous trunk. That this may well be so the operation of nerve stretching pretty conclusively proves, for to many of us it must have happened to note symptoms of severe irritation and suffering associated with increase in the vascularity of a nerve sheath.

(To be continued.)

III.—SUBJECTIVE SYMPTOMS IN EYE DISEASES.¹

By GEORGE A. BERRY, Ophthalmic Surgeon, Royal Infirmary, Edinburgh.

VI. METAMORPHOPSIA.

WE may distinguish between two forms of metamorphopsia; complete metamorphopsia, that is complete in the sense of existing for all surrounding objects independently of the part of the retina on which their images fall, and partial metamorphopsia, where the symptom of distortion is only noticeable

¹ Continued from vol. xxxi. p. 1032.

in the case of objects whose images are formed on definite portions of the retina. In either case the change of shape may be regular or irregular, and characterized by an apparent enlargement of objects (macropsia), or be of such a nature as to produce an apparent diminution in their size (micropsia). Of partial metamorphopsia the most distressing is that which is symptomatic of certain changes in the region of the macula lutea, as apart from the distortion to which these give rise there is generally at the same time more or less interference with visual acuity.

Our judgment of the shape of objects seen, depends in the first place on the configuration of their retinal images; it is therefore the more in accordance with their actual shape the more regular is the refraction of the rays of light through the dioptic media of the eye, and the more accurately the rays are focused on the retina. For the correct appreciation of form, it is further necessary that the percipient elements of the retina should be grouped according to their normal arrangement in the focal surface of the eye, and should all be capable of excitation to some extent at least. There is also, of course, the psychical element, which, in this respect, as well as always when there is a question of the interpretation of the impressions of the senses, has to be taken into account. Various illusions and delusions occur as to form and dimensions, as well as in connexion with other impressions and other special senses. These constitute, however, for the most part at least, a chapter in the physiology and pathology of the central nervous system, and do not call for consideration as symptoms of disorders of the eye.

Of the size of objects, again, we judge partly from the size of their retinal image, but as this, besides depending on their actual size, depends also on their distance from the eyes, the appreciation of size is more correct the more accurately the distance is gauged. In comparing the sizes of two or more objects at the same distance from the eyes, we are probably guided by the appreciation of their retinal images alone if they are small. When of any considerable size, however, the method of comparison is more complicated, and depends also upon the knowledge gained by the muscular sense on running the eyes along over the different points of the objects.

There are, therefore, evidently many different possible causes of metamorphopsia, as we may receive erroneous conceptions of size and configuration owing to the existence of abnormal conditions altering the character of the impressions gained in one or more of the above-mentioned manners.

In cases where there has been any accident to the cornea, or where its tissues have been altered by inflammation or other pathological processes, it is apt to lose its normal curvature, and thus the images which are formed on the retina become more or less distorted, and consequently less distinct. This, which is called corneal astigmatism, may be regular, that is, due to an altered

curvature having taken place, and therefore producing a distortion in one direction mainly, or irregular, owing to circumscribed alterations in curvature which have been produced in different directions and to different extents, and therefore give rise to irregularly distorted images. While the regular changes can, to a great extent, be counteracted in their effects by suitable optical means, the irregular rarely admit of much improvement. Changes in the curvature and refractive power of different parts of the lens may in the same way give rise to metamorphopsia owing to lenticular astigmatism. Irregular corneal astigmatism is usually pathological, irregular lenticular astigmatism often physiological, that is, not at any rate the result of disease.

Occasionally we find in cases of *nebulæ* of the cornea irregular distortion complained of. Such patients sometimes, though less frequently than one would imagine, see parallel lines bulged outwards or inwards, and often at the same time irregular outlines presented by circular or curved lines. This phenomenon is, no doubt, partly due to the alteration in curvature of those parts of the cornea which have remained clear, or have cleared up after the inflammation which has led to the *nebulæ* or circumscribed opacities has subsided; but it is also not unlikely that in cases of dense central *nebulæ* at least, and when the retina lies out of focus, it is caused merely by the circumstance that the rays which should pass through the centered portions of the curves of the cornea and lens are excluded, while the more peripheral alone go to form the image. Whilst the metamorphopsia to which lenticular as well as corneal irregular astigmatism gives rise seldom fails to attract the attention, especially if the individual takes notice of the impressions he receives, it is usually otherwise with that which is caused by regular astigmatism, when occurring congenitally at least. Although it is difficult to say in what manner many astigmatic individuals see,¹ because the form of the retinal image, which is for most objects always indistinct, depends on the state of accommodation of the eye, still it is clear that there must often be not only an enlargement of the image owing to the circles of diffusion, but also a distortion of it, as the enlargement thus produced is greater in one direction than another. It is evident, then, that many must see circles in the shape of ellipses and squares as oblong figures, yet it

¹ There are many possibilities: In the cases of astigmatism where it is possible the eye may be accommodated for the position of least diffusion, between the foci of rays through the principal meridians; there may be more or less disregard acquired for the areas of diffusion; there may be a rapid unconscious change of accommodation permitting a cerebral elaboration of the successive distinct portions of the image, while the other portions are disregarded. There are many reasons, however, for supposing that in most cases, at any rate, the eye is focused for the rays refracted in the plane of one of the chief meridians, in which case any object, except lines at right angles to that plane, must necessarily present a distorted retinal image. The further discussion of this point does not call for consideration in connexion with the subject of this paper.

is rare to hear a complaint made of such a distortion. And, indeed, except when the differences in the shape of the indistinct image of a bright object, such as the moon when seen under different states of accommodation, is observed, it is difficult to see how one should become conscious of the abnormality. Very often, indeed, even although the vision is much improved by correction with cylindrical glasses, the difference in the shape of bodies with and without correction is hardly apparent, or at any rate by no means so marked as the action of cylindrical glasses on those who are not astigmatic would lead one to suppose. In cases where the astigmatism exists in one eye alone, or is more marked in the one eye, there is a consciousness of the different apparent shapes of objects in the two eyes when the individual has directed attention to the impressions received on either eye separately, but even then there is often, and unless the anisometropia is considerable, no consciousness of distortion, owing to fusion of the two images. On the other hand, the more or less regular astigmatism which results often from the operation for the extraction of cataract, being produced, as is frequently the case in an individual who has had no marked degree of astigmatism previously, gives rise to a distinctly noticeable metamorphopsia owing to the comparison which he is able to make between the images of objects of known shape after operation and those previously experienced. A curious form of metamorphopsia is experienced by some myopic individuals when wearing the spectacles which correct the error in their refraction. They see lines on a flat surface at right angles to the horizontal visual plane curved towards them. Sometimes this is so distinct as to cause a good deal of annoyance. This, which is due to the spherical aberration of the glasses, is not complained of to anything like the extent which one would expect, owing no doubt to the want of habit in most individuals of observing at all closely the visual impressions which they receive. The same kind of distortion is much more frequently noticed by intelligent individuals when making use of the glasses necessary after cataract extraction; but in all cases is not long in disappearing or ceasing to cause inconvenience. Myopes, too, often complain of everything appearing smaller when they first begin to wear the necessary glasses. There are two reasons for this:—In the first place, all objects beyond their far point have always, owing to circles of diffusion, appeared to them rather larger than they do when their images are more correctly formed on the retina; and, in the second place, objects within their far point of distinct vision form somewhat smaller images on the retina when looked at through the correcting spectacles than without. The corresponding increase in the size of the retinal images when hypermetropes use glasses instead of their accommodation is not so often complained of, because not so disagreeable. In the case of aphakia the apparent size of objects, *i.e.*, whether they appear larger or smaller than was the case previously,

depends greatly on the glass used—the weaker the correcting glass, and therefore the further away from the eye it has to be placed in order to focus the rays from any object on the retina, the greater is the size of the retinal image obtained.

We have said that the apparent size of an object, besides depending on the size of its retinal image, depends also on the distance at which it is taken to be at from the eye, and the more or less complete knowledge, gained by experience, of the approximate actual size. If we hold up a finger in front of one eye it is found to cover a portion of a house or tree beyond it, the size of which appears nevertheless very much greater than the finger. An estimate of distance, again, is often very much facilitated by the knowledge of the actual size of the object, but where this factor does not come into play, it is arrived at consciously or unconsciously by a variety of circumstances influencing both the monocular and binocular impressions received. Thus monocularly there are the colour, shade, existence of shadow, and under certain conditions the parallax, and in the case of near objects the degree of accommodation which is required to obtain a distinct image, which singly or combined afford data on which our judgment may be based. And where this is possible we are greatly guided, no doubt, by the differences in shape of the retinal images received by approaching the eye to the object through a certain range, of the extent of which we form an unconscious appreciation. Binocularly there is in addition a consciousness of the degree of convergence of the optic axes which is required for binocular fixation of points at definite distances when the relation between such degree and the actual distances has been more or less unconsciously acquired; there is also the stereoscopic effect resulting from the cerebral elaboration and fusion of dissimilar images of objects in the two eyes. A familiar example of error in judgment as to size is that of a fly crossing in front of the eyes, and being unconsciously projected by the mind against a considerably more distant plane, appearing as a large bird. Such a pronounced misjudgment only occurs when neither the attention nor the visual axes are directed on the near object. But even when both eyes and attention are fixed on a particular object it may, though at a constant distance and subtending always the same visual angle, appear of different sizes owing to the different distances to which the mind may project it in space. It is owing in great measure to this circumstance that the moon, for instance, on the horizon appears larger than when higher in the heavens—our mental projection of the vault of the heavens being not a hemisphere, but only a portion of one. The apparent size of the sun and moon is very different to different individuals, but is always greater than can be accounted for by the size of their retinal images projected on to a plane near the eyes.

Defects of accommodation give rise to alterations in apparent

size owing to the error in the judgment of the distance of objects within the ordinary range of accommodation which results from them; thus, when all at once there is a paresis of accommodation, and a greater effort has to be made in order to focus a near object distinctly, or to attempt to focus it distinctly, this gives rise to an impression of greater proximity of the object, and as its image on the retina is of course of the same size as it would be were its distance more correctly estimated, it appears smaller. The micropsia thus occasioned is often very marked, and is met with both in cases where the paresis is the result of a direct or reflex interference with the function of the branches of the third nerve which supply the ciliary muscle, which may occur idiopathically or be due to the action of a mydriatic. Conversely a spasm of accommodation, from whatever cause, sometimes gives rise to macropsia, as the consciousness of an abnormally feeble effort to accommodate the eye for a near object causes the object to appear more distant, and therefore bigger than it would otherwise be estimated. Macropsia has thus been observed after the use of such myotics as pilocarpine and eserine. Accommodative micropsia is most marked the nearer the object lies to the eye; accommodative macropsia, on the other hand, the further it is removed from the eye.

But besides metamorphopsia due to defects in accommodation, there are also similar misjudgments as to size, caused by abnormally impeded or facilitated movements of convergence of the optic axes, or any optical conditions which permit of binocular fixation with the axes of vision directed so as to meet either nearer or further off than the object looked at. Thus prisms with the bases inwards in front of each eye appear to magnify owing to the axes of vision meeting further off than the objects looked at, giving rise to an impression of greater distance, while prisms with the bases outwards in front of each eye appear to diminish, as under these circumstances the axes of vision cross in front of the objects fixed, which appear nearer, and consequently smaller, than would be the case without the prisms. Operations on the muscles of the eyes are sometimes, if there has been previously binocular vision, followed by similar apparent alteration in the size of near objects.

So far the changes in shape of objects that have been considered have been such as were due to optical causes or others not symptomatic of any very grave disorders of vision. It is otherwise when the cause of the metamorphopsia lies in the retina, when owing to some alteration in the relative positions of the percipient elements an alteration takes place in the external projection of the luminous impressions which they receive. The retinal elements may be displaced forwards by an exudation of fluid, which according as it is serous or fibrinous, and general or localized in patches, and as to whether it involves the more peripheral or more central portions of the retina, is accompanied by

subjective symptoms, varying both in their nature and severity. The exudation may be in the retina itself, or may give rise to swelling of the retina, so that a smaller number of its elements come to occupy the same superficial area as before; or, in other words, the same number of elements are spread over a larger space than under normal circumstances. The image of any object falling on such an area produces a stimulation of a smaller number of retinal elements than it would otherwise do; but the projection being unaltered, this is not compensated for, and the object appears diminished. On the other hand, the shrinking resulting from the contraction of such a fibrinous exudation may lead to a greater approximation of the elements in the area involved, so that the same number of elements are spread over a smaller space than they originally occupied. It will be readily understood how, in a similar manner to that described in the case of a separation of the elements, such approximation must give rise to macropsia. This swelling or contraction may take place regularly or irregularly in all directions, or more in one or more particular directions than in others, consequently the metamorphopsia to which it gives rise may exhibit a corresponding degree of regularity or irregularity. Thus although the distortions in cases of disease of the macula usually occur more or less symmetrically round the point of fixation, such irregular changes—as, for instance, rupture of the choroid, which, owing to the greater firmness of attachment of choroid and retina to the sclerotic at the posterior pole of the eye, almost invariably takes place between the macula and optic papilla—are accompanied by correspondingly irregular metamorphopsia. The apparent distortion of objects produced by detachment of the retina is usually so marked as to spontaneously attract the attention of the patient. It is not only irregular, but frequently inconstant, changing like the images reflected from the surface of disturbed water. Metamorphopsia from this cause is often, too, distinguished by the distorted objects being bordered by colours. In diffuse choroido-retinitis, a form of inflammation which is often of syphilitic origin, there is very generally a pretty regular metamorphopsia which usually takes the form of micropsia, sometimes, however, of macropsia. The micropsia is frequently very marked, particularly if the affection is confined to one eye. It usually only asserts itself after the inflammation has existed for some time, and often remains for long after it has been recovered from. Forster, who was the first to explain the cause of retinal metamorphopsia, pointed out that the micropsia increases as the distance of the object from the eye becomes greater, thus showing that it is not connected with any coexisting defect in accommodation. I have not seen macropsia caused by this disease, but it is described by Ole Bull in his recent work on *The Ophthalmoscope and Lues*; and there seems no reason why it should not sometimes be a later manifestation of the same lesion which so commonly pro-

duces the opposite distortion. The condition of macropsia following on micropsia always, indeed, suggests the choroid as the site of the inflammatory change. Where the lesion has been from the first undoubtedly retinal, I have seen the micropsia to which it gave rise remain permanent. When the metamorphopsia does not exist over a large area of the field, or involve the centre, it is sometimes only to be made out by a careful subjective examination.



By causing the patient to fix a spot in the middle of a number of parallel lines a few millimetres apart on a piece of paper, and held so that they are alternately vertical and horizontal, and asking him whether they appear all to run parallel, or bend outwards or inwards, at any particular place, we may detect not only the existence of a localized metamorphopsia, but also whether, as when the lines appear to bend inwards, the projection of the retinal images in that position is smaller, or when they appear to bend outwards the projected images are bigger than normal, we have most probably to do with a recent exudation causing a distension, or an old exudation which has led to a contraction of the retina in that area. The accompanying figure shows the distortion indicative of micropsia and macropsia respectively. In cases of progressive myopia there is frequently metamorphopsia owing to the changes which take place in the region of the macula lutea. As I have found the distortion in this condition to take the form of macropsia, it seems to

me probable that sometimes, at any rate, these macular changes are due to the contraction of exudations in the subjacent choroid which involves the external layers of the retina, more than to actual stretching of the retina. Possibly the distortion might be due, however, to micropsia occasioned by stretching of the surrounding and less firmly adherent parts of the retina. The senile change which takes place in the vitreous membrane of the choroid close to, or immediately behind, the macula, gives rise to an irregular metamorphopsia, which may be detected in the manner described. Retinal hæmorrhages when near the macula often leave behind them a similar condition of metamorphopsia. Sometimes such changes are not easily seen with the ophthalmoscope, in which case the presence of metamorphopsia is of value in directing one to a correct diagnosis.

IV.—ON THE POSITION OF THE UTERUS AND OVARIES IN THE CHILD, WITH REMARKS ON THE GROWTH OF THE FEMALE GENITALS.

By J. SYMINGTON, M.D., F.R.S.E., Lecturer on Anatomy, School of Medicine, Edinburgh.

(Read before the *Edinburgh Obstetrical Society*, 13th January 1886.)

Uterus.—The attempts that have been made to determine the position of the adult uterus by an examination of the cadaver do not appear to be regarded by some gynecologists as of much value in the settlement of the vexed question of its normal position; indeed, the results obtained by this method would appear to be frequently considered misleading, erroneous, and in direct opposition to the results of clinical observation.

Hart and Barbour,¹ in referring to the chief means employed in order to ascertain the situation of the uterus, state that frozen, spirit, or chromic sections "are not specially valuable, as there is some post-mortem change in the uterine position not yet thoroughly understood," p. 50.

Schultze,² in contrast with his well-known views as to the position of the uterus in the living body, says that in the cadaver its position is not constant, but in the majority of cases it is found with its hinder surface lying against the posterior wall of the pelvis, or, at least, in contact with the anterior wall of the rectum.

*H. Fritsch*³ holds that the gynecologist can obtain no assistance in this difficult subject from anatomical preparations, and that what careful clinical observation fails to discover is scarcely to be brought to light in any other manner. In Fig. 1 of his work he gives a diagrammatic mesial section of the female pelvis to illustrate the physiological position of the uterus with the bladder and rectum empty. The uterus is shown anteverted and anteflexed, and lying upon the bladder. In contrast with this his next figure shows the position of the uterus in the cadaver, with bladder and rectum also empty. In this case it is represented as retroverted, and lying up against the rectum. It appears to me that the value of post-mortem studies in connexion with this subject has been unduly depreciated, and that the post-mortem changes in the position of the uterus have been greatly exaggerated. Clinical observers are generally agreed that, in the living body, if the bladder be empty, the uterus is more or less anteverted, and that whilst Schultze may have somewhat exaggerated the degree of anteversion, his views are in the main correct. It seems to be

¹ *Manual of Gynecology*, 1882.

² *Lageveränderungen der Gebärmutter*, 1881.

³ *Die Lageveränderungen der Gebärmutter*, 1885.

very frequently assumed that this is not the position which the uterus is found to occupy after death, the uterus being in the latter case retroverted. In support of this we are referred to drawings of frozen sections by Henle, Cruveilhier, Luschka, and Braune, and to the very positive statements of Claudius¹ of Marburg, who asserted that "the uterus is only in its normal position when along with the broad ligaments it touches the posterior wall of the pelvis and the rectum." Henle's² section, which is often employed to illustrate the post-mortem position of the uterus, shows that organ retroverted, so that its long axis is nearly parallel with that of the vagina. For several reasons this woodcut is of but little value. We have no definite information as to how much of the body was frozen, and the drawing itself presents several unusual features, which indicate an abnormal condition of the uterus. The woodcut in Cruveilhier's *Traité d'Anatomie*, 5th edition, 1874, like almost all the illustrations in that work, is simply a copy of Henle's. The sections of Luschka³ and Braune⁴ show the uterus retroverted; but, on the other hand, a number of specimens have been figured by very reliable authorities in which the position of the uterus closely corresponded with the results of clinical examination. This will be readily apparent by a reference to the following works:—

- E. Q. LE GENDRE.—*Anatomie Chirurgicale Homalographique*, Paris, 1858. Plate 18.—Mesial section of pelvis of woman aged 30, probably multipara. Uterus anteflexed.
- RÜDINGER.—*Supplement zur topographisch-chirurgischen Anatomie des Menschen*, 1879. Plate 4.—Coronal section of body of female aged 21. Fundus of uterus directed forwards and to the right.
- HASSE.—"Beobachtungen über die Lage der Eingeweide im weiblichen Beckeneingange," *Arch. f. Gynäk.*, Bd. ix. Uterus anteverted.
- HIS.—"Über Präparate zum Situm Viscerum," *Arch. f. Anatomie*, 1878. He figures 4 female pelves, in all of which the uterus is anteflexed and anteverted.
- FÜRST.—"Ein einfach plattes Becken, u. s. w.," *Arch. f. Gynäk.*, 1877. Uterus anteflexed.
- D. B. HART.—*Topographical and Sectional Anatomy of the Female Pelvis*, 1885. Plate 2.—Mesial section of pelvis of adult woman. Long axis of uterus nearly coincided with axis of inlet.

All the above-mentioned plates are drawings of frozen preparations except those of His; the latter hardened the viscera *in situ*

¹ *Medical Times and Gazette*, 1865.

² *Handbuch der Anatomie*. Eingeweide, fig. 340.

³ *Die Lage der Bauchorgane*, 1873. Pl. 5, fig. 3.

⁴ *Topographisch-anatomischer Atlas*, Leipzig, 1876. Pl. 2.

by injecting into the bloodvessels a solution of chromic acid. This list is by no means an exhaustive one, but it is evident from it that the results of clinical and post-mortem examinations are not so widely opposed as some would make us believe.

I have ventured to wander somewhat from the immediate object of my paper, because the existence or amount of displacement of the uterus after death is especially important in connexion with the determination of the position of this organ in the child, as in them we must depend almost entirely upon the study of the cadaver. Even were it desirable to make digital examinations of the pelvic organs in children, the small size of the body of the uterus would render the diagnosis of its position almost impossible. Subjects are usually frozen lying upon their backs, and in this position the large and heavy body of the adult uterus would tend to become displaced backwards more readily than this organ would in the child, where it is not only absolutely but even relatively smaller. Still, had it been proved that the adult uterus fell back after death into the retroverted position, this would have diminished to some extent the value of any deductions that might be drawn from its post-mortem examination in the child.

Compared with the enormous amount of literature bearing upon the question of the position of the uterus in the adult, its relations in the child have been, comparatively speaking, neglected. It is true that numerous expressions of opinion on this subject can readily be found; but so far as I am aware there are no published drawings of frozen sagittal sections of the pelves of females between the periods of infancy and adult life, except two rather diagrammatic figures by Pirogoff of girls twelve and seventeen years of age, and a plate in Le Gendre's work made from a girl eighteen years old. In the latter both bladder and rectum were distended, and the uterus fixed between them.

D. B. Hart's very valuable and extensive *Atlas of Female Pelvic Anatomy*, 1884, contains no illustrations bearing upon this subject, and this is also the case with Martin's *Atlas of Obstetrics and Gynecology*, translated by Fancourt Barnes, 1881.

In 1853 Boullard published a thesis,¹ in which he asserted that the uterus of the child was normally anteфлекed, the flexion occurring at the union of the body with the larger and more rigid cervix. The opinion of Boullard has been widely accepted, and is still often taught, especially by French gynæcologists. Thus A. Courty² writes: "In the child the neck (of the uterus) is very large, the body very small. . . . The isthmus is indicated at this age less by a contraction than by a change of direction between the neck and the body, for the results of Boullard's researches, con-

¹ *Quelques mots sur l'uterus*, Paris, 1853.

² *Practical Treatise on the Diseases of the Uterus, etc.* Translated from the third edition by Agnes M'Laren, 1882.

firmed by my own observations, is that there is very frequently, if not always, antelexion of the body on the cervix." Antelexions of the uterus are usually divided into the congenital and the acquired. In referring to the former Courty writes: "This is an exaggeration of the usual conditions of form and inclination of the uterus in the foetus, in the child and young girl at puberty, often even in the adult multipara" (p. 427).

Several very competent observers do not support the generally accepted idea that the child's uterus is normally antelexed. For instance, Klob¹ says, p. 56: "Up to the commencement of puberty the uterus is neither bent forwards nor backwards; only at the development of that period does it assume a slight curve forwards, the angle of the curve coinciding with the level of the internal orifice."

Langerhans² made sagittal frozen sections of forty new-born female children, but, unfortunately, his results have only been published in abstract and without illustrations. He generally found the uterus anteverted and antelexed, but never met with a retroversion.

Bandl³ found the uterus in the new-born child sometimes straight, at other times slightly flexed. He believes that the membranous body, as opposed to the firmer cervix, renders an alteration in the axis of the uterus in the cadaver very probable, but he doubts if it exists in the living. In older children, in whom the body of the uterus has acquired greater firmness, that organ is much more frequently found straight.

Kölliker⁴ in a valuable monograph gives the results of his examinations of the uterus in the foetus and child. He says that up to the sixth month of foetal life the relations of the uterus and vagina are such that flexion of the uterus cannot occur. Towards the end of foetal life and the first year after birth a slight degree of antelexion occurs, which may be due to the body being thinner than the cervix. This antelexion is also favoured by the fact that while the fundus is fixed by the tense round ligaments, so that it cannot move backwards, it is pressed upon from above by the sigmoid flexure, and is thus bent forwards. He believes, however, that many uteri of about this age are straight, or show only a slight S formed curve, of which the upper part is concave forwards. Kölliker gives drawings of a frozen sagittal section of the pelvis of a new-born child, and also one of an infant nine months old. He has a drawing of a mesial section of the pelvic viscera of a girl aged 17 years, but, unfortunately, it was made after the removal of the viscera from the body.

From the above summary of the literature of this question it will

¹ *Path. Anatomy of the Female Sexual Organs*. Translated by Kammerer and Dawson, 1868.

² *Centralblatt f. Gynäk.*, No. 10.

³ *Arch. f. Gynäk.*, Bd. xiii.

⁴ *Über die Lage der weiblichen inneren Geschlechtsorgane*, 1882.

be seen that not only is the position of the uterus in the infant still a subject of dispute, but also that satisfactory observations respecting its relations in children of more advanced age are very limited.

In several female children I have endeavoured to determine the position of the uterus by means of frozen sections. In all of them the entire body was frozen, the pelvis divided in the mesial plane, and the sections carefully traced before they thawed. In addition to a few foetuses I have made sections of female children aged six weeks, two months, six months, fifteen months, one year and ten months, two years and two months, six years, and thirteen years.

In the foetus the empty bladder is flattened from before backwards, and on vertical mesial section its cavity forms with that of the urethra a continuous slightly curved line. At this time the bladder reaches higher up than the uterus, and the whole of the anterior surface of the latter lies in close contact with the bladder.

The rectum is usually distended with meconium, and lies in contact with the uterus, so that there are no coils of intestines in the pouch of Douglas. The axes of the uterus and vagina form a very obtuse angle.

Fig. 1 represents a life-sized drawing of a section of the pelvis of a child aged six weeks. This infant was only 17 inches in

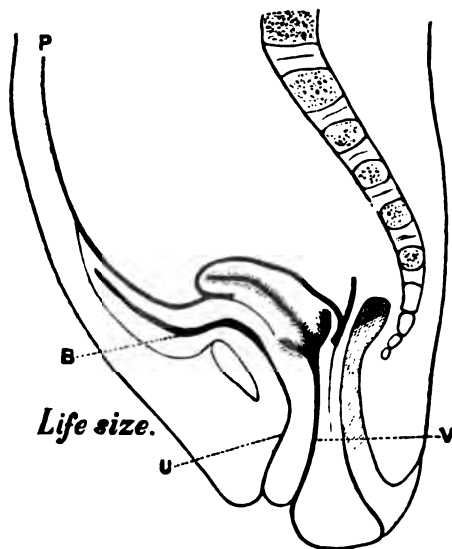


FIG. 1.

length, and the centre at the lower end of the femur was very small. It was probably born at the seventh or eighth month, and may be regarded as corresponding to an ordinary nine months'

foetus. It will be seen that the bladder is still almost entirely an abdominal organ. The uterus was displaced to the right side, so that after the mesial section of the pelvis had been made, a slice had to be removed from the uterus, in order to open its cavity. The uterus was anteverted, and also somewhat anteфлекed. When I received this infant, the abdomen was greenish and somewhat distended with gas. This probably accounts for the ante-flexion, and also increased the anteversion, the distended intestines having pushed the uterus and also the bladder downwards and forwards. It must be remembered that the lateral displacement of the uterus favoured the anteversion and anteфлекion, since the bladder projects farther back in the mesial plane than at the sides.

About the time of birth a series of important changes commence in the pelvis and the contained viscera, which must have a marked influence upon the position and range of mobility of the uterus. The pelvis increases in size more rapidly than the portion of the trunk above it; the bladder not only descends, but also alters its shape; the rectum becomes more tortuous, and the axes of the vagina and urethra become more horizontal. In order to trace the progressive steps of these changes and their effects upon the position of the uterus, we require a series of mesial sections of the bodies of females from early infancy to adult life. Unfortun-

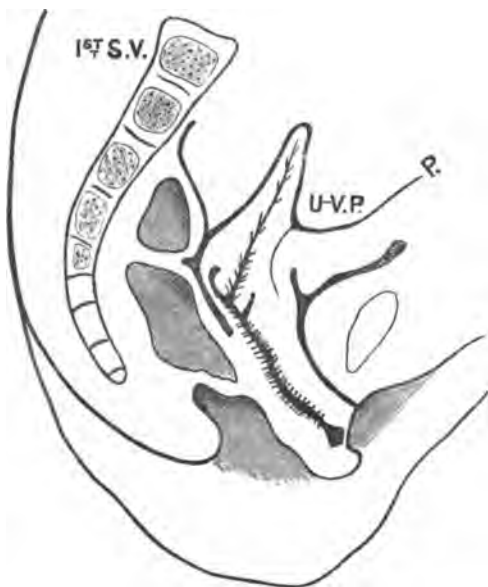


FIG. 2.

ately there is no such complete series, but we can state generally the main results. As we have already seen, the foetal bladder is

flattened from before backwards, so that it only possesses anterior and posterior walls. Soon after birth it begins to descend into the pelvis. The lower end of the bladder does not move down so much as the upper part. Such being the case, it can easily be understood how a fold is formed behind the urethra—the posterior limb of the empty diastolic bladder (Hart). The time of formation of this posterior limb varies somewhat, but I have several times seen traces of it in newly born male children.

Fig. 2 represents a section of a child aged two months, in which the bladder was empty. The posterior limb was quite distinct in this case. The child was well developed and rather fat. The uterus was straight, and intestines lay in front of it and upon bladder.

Fig. 3 was taken from a section of a child fifteen months old. It

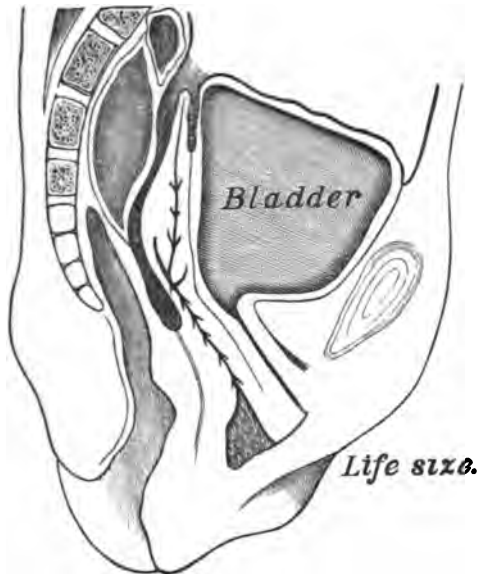


FIG. 3.

shows the effect of a distended bladder in pushing back the uterus.

In the children, one year and ten months and two years and two months, the bladder was empty; in the former the uterus was retroflexed, and in the latter ante flexed. These, however, cannot be regarded as normal sections, the displacements of the uterus being the result of pressure upon the abdominal walls. I used these bodies for the purpose of ascertaining the alterations in the position of the larynx in over-distension and acute flexion of the head, and in fixing them in position before freezing, pressure was

made upon the abdominal walls. They show the necessity of care in the manipulation of the body after death.

The most interesting specimens that I have to bring under your notice are those of the sections of the pelvis in two girls aged six years and thirteen years respectively.¹

In the girl six years old, the trunk was divided by a series of horizontal sections down to the level of the umbilicus, but the pelvis was divided by a vertical mesial section. The bladder was empty, and afforded an excellent example of its configuration when in diastole. Its upper surface was concave and covered by the peritoneum. Its anterior surface, which looked downwards as well as forwards, was in contact with the lower part of the anterior abdominal wall, the back of the pubes, and the retropubic pad of fat (Hart). The posterior surface, which looked backwards and slightly downwards, was in relation to the cervix of the uterus and the upper part of the anterior vaginal wall. Both the anterior and posterior surfaces of the bladder were devoid of peritoneum. If a mesial section be made of a pelvis, in which the bladder is in diastole, the cavity of the bladder, along with that of the urethra, possesses a Y-shaped form, the two limbs of the Y being formed by the bladder and the stem by the urethra. In this case the anterior limb of the bladder was about 3 cm. in length, and the posterior nearly 2 cm. The axis of the uterus was straight, there being no indications of ante flexion or retro flexion. Its direction nearly corresponded with the axis of the pelvic inlet, but it was more vertical. There were no traces of peritonitis nor of adhesions, but the space in front and behind the uterus was occupied by serous fluid, the coils of the small intestines having been floated up above the level of the top of the uterus. It is difficult to estimate the effect of this fluid upon the uterine position. As the uterus was less anteverted than usual, we may assume that the uterus had sunk in the fluid, but it is worthy of notice that it nowhere touched the rectum.

The girl aged 13 years was well developed. After the body had been thoroughly frozen in the horizontal position a vertical mesial section was made of the entire body. The pelvis was divided almost exactly in the mesial plane, but in consequence of a slight displacement of the uterus to the left side only the upper part of its cavity was opened. The bladder contained a small quantity of frozen urine, and the rectum was empty. The walls of the bladder were much thicker than they are usually represented in diagrammatic sections. The urethra was $1\frac{1}{4}$ inches in length. The anterior vaginal wall measured 2 inches, and the posterior $2\frac{1}{2}$ inches, or nearly the average length in the adult. The pouch of Douglas contained a loop of small intestine. After the left half of the section had been traced, embedded in plaster of Paris and

¹ I hope to publish shortly a work containing coloured lithographic plates of these two specimens.

hardened in spirit, I removed a thin slice from the uterus so as to open its cavity in its whole length. Fig. 4 was made from a careful life-sized drawing of this section of the uterus. From this figure it will be seen that with the exception of a slight curve near the external os the axis of the uterus was straight. Although there were no traces of any flexion of the body upon the cervix, still there was marked anteversion, the uterus lying upon the bladder, and its long axis forming with the horizon an angle of about 20° .

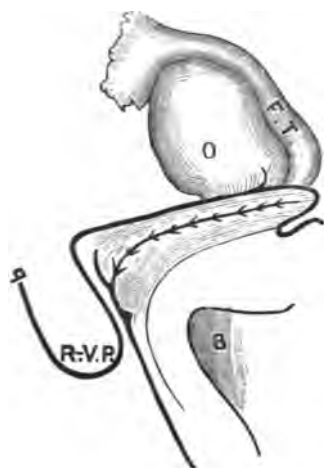


FIG. 4.

These specimens support generally the views of Klob, Bandl, and Kölliker. The recognition of a class of anteversions as "congenital," in the belief that the uterus is normally anteverted in the infant, and that they represent a persistence of that condition, appears to me to be based upon an erroneous conception. I believe that the uterus is less anteverted in the child than in the adult, but probably the adult uterus is more frequently anteverted.

Ovaries.—The ovaries, like the testicles, are at first situated in the abdomen; and in the process of development both these organs descend, the former into the pelvis and the latter into the scrotum. While, however, the testicles usually reach their permanent position in the scrotum before the end of fetal life, the ovaries in the new-born child are usually found lying at the brim of the true pelvis, with only their uterine ends projecting into its cavity. Very soon after birth they descend, so as to lie against the upper part of the side wall of the pelvis, their upper extremities being internal to the external iliac arteries, or often just below them. They have now acquired a position practically similar to that in the adult, but perhaps a little higher.

The want of agreement in the results of the researches of Schultze, His, and Hasse on the position of the ovaries may be regarded as demonstrating that it is not constant; but I think that most of the variations can be easily explained. The ovaries usually lie in a sagittal plane against the side walls of the pelvis, with their long axes more or less vertical, so that their surfaces are internal and external, borders anterior and posterior, and extremities superior and inferior. Fig. 4 shows the left ovary in a girl aged 13 years, which was exposed from the inner side by making a mesial section of the pelvis, and then removing some coils of the intestine. From this it will be noticed that the Fallopian tube runs upwards along its anterior border, and then arches backwards

above its upper extremity. The ligament of the ovary passes outwards, and then turns upwards to be attached to the lower end of the ovary. A fold of peritoneum, called the infundibulo-pelvic ligament, descends from the brim of the pelvis to the ovary. The ovary is not firmly fixed in any one position, but, like the uterus, it possesses normally a considerable range of mobility. The alterations in its position are mainly due to changes in the uterine position. Schultze¹ has shown that if the uterus be well anteverted, the ovarian ligaments draw the lower ends of the ovaries downwards and forwards, so that their long axes are directed from above downwards and more or less forwards. As the body of the uterus moves upwards and backwards, the ovaries are pushed in the same direction, but their lower ends more than their upper ones, consequently their long axes come to incline from above downwards and more or less backwards.

Lateral displacements of the uterus are very common, and His² has shown that this influences the position of the ovaries. Thus if the uterus be displaced to the left side the right ovarian ligament is put upon the stretch, and draws the lower end of its ovary inwards, so that instead of lying vertical it tends to become transverse.

I have satisfied myself, from an examination of the ovaries in children, of the correctness of the views of Schultze and His; but as the ovaries in young children are softer than in the adult, they are very apt to become altered in shape from the pressure of neighbouring organs.

Growth of Genitals.—The sexual organs are generally believed to undergo a special and marked increase in size as well as in functional activity at the period of puberty. We possess, however, very few accurate observations as to the growth of the male genitals; and even in the case of the female organs, attention has been almost entirely confined to the uterus. The uterus of a new-born child differs not only in size, but also in its external and internal configuration, from that of the adult. The cervix is longer, thicker, and firmer than that of the body. On opening its cavity the arbor vitæ will be found extending along its whole length—body as well as cervix—and there is no constriction corresponding to the internal os. Some authors give precise measurements of the relative length of the cervix and body; but in reality it is not easy to distinguish precisely the boundary between these two portions, since there is no internal os, and the arbor vitæ reach to the top of the uterus. The upper third or so is generally much thinner and more flexible, and may be taken as representing the body.

It is generally stated that the uterus undergoes little or no

¹ *Die Pathologie und Therapie der Lageveränderungen der Gebärmutter.* Berlin, 1881.

² "Die Lage der Eierstöcke in der weiblichen Leiche," *Arch. f. Anat.*, 1881.

change until puberty, when it rapidly increases in size, the body growing faster than the cervix, so that the uterus soon acquires its adult characters. The arbor vitæ are said to disappear in the body of the uterus about the fifth or sixth year, only a median ridge remaining, which is usually obliterated at puberty.

Kölliker¹ says that he knows no organ that varies, in different subjects of the same age, so much in its size and development as the uterus during the latter months of foetal life, in the new-born child, and in the girl up to puberty. The uterus of a new-born infant may have the walls of its body so thick and firm that a flexion appears very improbable; and, on the other hand, in a girl 10 years old they may be very thin and flexible.

Subjoined will be found a table giving the length of the uterus, and notes with regard to the arbor vitæ, prepared from specimens in my own possession. I have also added those described by Kölliker, which are indicated by the letter K. The list is by no means so complete and extensive as I should wish, but I have not yet finished my investigations on this subject.

An examination of the table supports, to a certain extent, the

Age.	Length of Uterus.	Remarks.
New-born.	2.5 cm.	Arbor vitæ distinct in both body and cervix.
Do.	2.5 "	Do.
Do.	2.6 "	Do.
Do.	3.0 "	Do.
Do.	3.4 "	K.
6 weeks.	2.0 "	Do.
2 months.	2.5 "	Do.
5 "	2.4 "	Do.
6 "	2.8 "	Do.
1 year 6 months.	2.5 "	Do.
1 year 6 months.	2.5 "	K.
6 years.	2.5 "	Do.
6 "	2.8 "	Do.
6 "	3.0 "	Arbor vitæ very faint in body.
7 "	2.6 "	Arbor vitæ distinct in both body and cervix.
7 "	3.0 "	Arbor vitæ faintly marked in body.
9 "	2.10 "	Arbor vitæ distinct in both body and cervix.
10 "	3.5 "	Arbor vitæ faintly marked in body.
10 "	3.1 "	K.
12½ "	4.9 "	Central ridge in body; fundus of uterus well developed; adult type.
13 "	3.0 "	Arbor vitæ distinct in both body and cervix.
16 "	3.1 "	K.
16 "	4.4 "	K.
16 "	5.0 "	K.
18 "	5.3 "	K.

¹ *Op. cit.*, p. 13.

views of Kölliker. The average length of the uterus in the newborn child seems to be about 2.5 cm., but Kölliker had one nearly 1 cm. longer. The three girls 16 years of age differ very considerably one from another; but this is easily understood, as it is well known that the period of puberty varies greatly in different individuals. My own specimens go to prove that the uterus does not undergo any marked increase in size between infancy and puberty. Thus all of them, with the exception of that of the girl aged 12½ years, were of the infantile type, the body of the uterus being very thin.

The time of disappearance of the arbor vitæ from the body of the uterus seems to be somewhat variable. Thus in one specimen from a girl aged 6 years they were very indistinct, while they were well marked in children 9 years and 13 years old.

The rest of the genitals appear to grow more uniformly with the body generally than does the uterus. In the girl aged 13 the ovaries, Fallopian tubes, and vagina were much better developed than the uterus, and in several of the specimens in which the uterus was still infantile, the ovaries were nearly as large as in the adult.

V.—A CASE OF STRYCHNIA POISONING, WITH AN ANALYSIS OF STEINER'S VERMIN-KILLER.

By J. ALLAN GRAY, M.A., M.D., F.R.C.P. ED., Medical Officer of Health,
Leith.

(Read before the Medico-Chirurgical Society of Edinburgh, 3rd March 1886.)

ON the morning of the 10th November 1882, I was hastily summoned to 46 Coburg Street, Leith, to see a woman who was said to have taken poison. I reached the house at 9.22 A.M., and was met there by Mr Cousland, M.B., the Assistant House-Surgeon of Leith Hospital, who, on being called to the case about 9 o'clock, and recognising its urgency, had sent for me to see it with him.

The patient, a woman of 35 years of age or thereabouts, of middle height, and of well-nourished condition of body, was found lying in bed in the dorsal posture. She was perfectly conscious and rational, but somewhat flushed in face and excited in manner. The pulse was small and thready, 100 per minute; the respiration hurried; the pupils equal and dilated. There were no signs of vomiting or purging, nor any history that either had occurred.

On being asked as to what had caused this condition, the patient informed me, as she had already told Dr Cousland, that at 6 o'clock in the morning (about three hours and a quarter previously) she had swallowed, with suicidal intent, the contents of a packet of vermin-killer; and she pointed to the cover and advertisement-sheet of a threepenny packet of Steiner's vermin-killer, which were

lying on the table at the head of her bed, as being the wrappings of the powder which she had taken. Just as this information was obtained the patient called out suddenly, grasped in affright at the bedclothes and at our hands, asked to be held, and beseeched us not to leave her. Coincident with this there was a little twitching of the muscles of the face and neck, and a little increase of the lividity of the already congested face.

In the absence of a knowledge of the active ingredient of Steiner's vermin-killer, we had to be guided by symptoms. These pointed unmistakably to poisoning by strychnia, although the excited condition of the patient, the dilated state of the pupils, and the information derived from the neighbours that the woman had been drinking heavily of late, by raising a doubt as to hysteria or alcoholism, tended to obscure the diagnosis. Feeling certain, however, that the presence of strychnia explained the appearances—a view which was supported by the statement of the patient that the powder was of a bitter taste—I gave her at once $\frac{1}{4}$ grain of bimeconate of morphia hypodermically, and sent off for a quantity of chloral hydrate.

To empty the stomach was, of course, the next expedient thing to do, pending the arrival of the chloral, although, in view of the time which had elapsed since the poison was taken, this measure was not likely to be of such vital service as it would have been if employed earlier. Yet, on the other hand, the delay in the appearance of symptoms, as indicating delay in the absorption of the poison, rendered the emptying of the stomach likely to be of much more use than it would have been in a case where the invasion was more rapid. By this time, however, the jaws had begun to become fixed,—a condition which, as trismus is one of the later developed symptoms of strychnia poisoning, indicated that if the evidences of poisoning had begun late, they were now progressing at a considerable speed. The gag for the stomach-pump being therefore not easy of introduction, we determined to administer an emetic, and as Dr Cousland just before my coming had dissolved a drachm of sulphate of zinc in water, and had begun to give it, we now proceeded to administer the remainder of this with the spoon. When this had been done, the spasm had completely relaxed, and we were therefore able to introduce the gag and empty out the stomach. The contents and washings of the stomach were received by us into a clean basin, and retained for further examination. They consisted of a clear fluid, containing nothing more solid than a little mucus. Shortly after we had finished using the pump a severe spasm came on, attacking especially the muscles of the chest, but unaccompanied by opisthotonos or emprosthotonos. The patient became unconscious, the face grew more and more bloated, the pulse smaller and smaller; and although by this time the chloral had arrived, the need for it had passed, as the patient died from asphyxia at 9.35 A.M., thirteen

minutes after I first saw her, and presumably three hours and a half after taking the poison.

The post-mortem examination was made at 10 A.M. on the 14th November, ninety-six hours after death. The face was placid, and seemed to have changed little since the patient was alive; it lacked altogether a death-like aspect. The whole body was in a condition of marked cadaveric rigidity, with the exception of the arms, the stiffness of which had evidently been overcome by force. The rigidity of the hands and fingers appeared especially noteworthy, though no marked incurvation of these or of the feet was to be seen. The back was considerably arched, but not to such an extent as to raise the buttocks off the table. There was a total absence of cadaveric odour, and the post-mortem lividity was by no means great. On opening the chest the heart was found empty on both sides, the right side flaccid, the left contracted; the blood was fluid and dark. The lungs were cedematous, and congested posteriorly, but were otherwise normal, with the exception of a few small emphysematous bullæ on their anterior aspect. There was no special darkening of the muscles of the throat and gullet, such as Casper found in the post-mortem examination of his first case of strychnia poisoning. The stomach contained 4 ounces of clear fluid of a bluish tint, resembling that removed with the stomach-pump, but of a slightly paler hue. The liver was congested and smelt of alcohol. The kidneys and spleen were likewise congested. There were numerous small cysts in the ovaries, but none presenting the appearance of a corpus luteum. The uterus was retroflected, but not gravid.

Analysis.—The contents of the stomach removed at the post-mortem examination, and the mixture of contents and washings removed during life, were separately subjected to dialysis and to Stas's process for the separation of alkaloids. Dialysis of 1 ounce of the fluid from each gave negative results in both cases, and Stas's process applied to the remaining 3 ounces of the contents of the stomach, which had been removed at the post-mortem examination, likewise failed to do more than just indicate the presence of strychnia. But Stas's applied to one-fourth of the mixed washings and contents demonstrated clearly the existence of strychnia therein, but showed that the alkaloid was not present in quantity nor adulterated with brucia. Analysis of the solid organs was unfortunately rendered impossible by the jar containing them having been accidentally emptied into one containing portions of similar organs from other cases.

Remarks.—What first strikes one in connexion with cases of this kind is the great facility with which the woman was able to procure the poison. Her first intention had been to commit suicide with oxalic acid, and on the evening previous to her death she had gone to a druggist and asked for this substance; but, owing either to her then half intoxicated condition, or to her

being unable to give any satisfactory reason for her intended purchase, the shopman refused her request. Later in the evening she called at the shop of another druggist, and on asking for rat poison was supplied with a threepenny packet of Steiner's vermin-killer, with what result the foregoing paper tells.

The next point of importance is the length of time which intervened between the taking of the poison and the appearance of active symptoms. The woman's statement that she took the powder at 6 o'clock seems perfectly trustworthy, and her neighbours who called on her at 8 o'clock certainly saw nothing very definitely the matter with her then, though they sent off to the hospital for the doctor on the strength of her declaration that she had taken poison. It was only towards 9 o'clock, just before Dr Cousland arrived, that the symptoms appear to have begun, though having once commenced they advanced with great rapidity. Making ample allowance, therefore, for indefiniteness regarding the exact time, we must conclude that at least two hours and a half had elapsed between the taking of the poison and the first appearance of symptoms. This delay is certainly considerable in view of the quantity of strychnia in the powder, and the form in which it was taken; for the package of vermin-killer which deceased took contained, according to the subjoined analysis, about a grain of strychnia, mixed with a few grains of starch, and some harmless colouring matter. How much the previous drinking habits of the patient had to do with this delay, by deranging digestion and retarding absorption, it is impossible to estimate. In cases of compound poisoning with strychnia and morphia, or solutions of morphia, it is, of course, very different, since the two poisons are antagonistic in several respects. The delay is there often much longer than two hours and a half. In one case, recorded in the *Lancet* for 1882 (vol. ii. p. 724) by Mr Macredy, M.B., where the taking of a packet of Battle's vermin-killer with suicidal intent was immediately followed by the drinking of two ounces of laudanum, symptoms of strychnia poisoning did not appear until eight hours after, although the appearances of an overdose of opium, with the exception that the pupils were not contracted, were present when the patient was first seen by Mr Macredy four hours after taking the poison. It is, however, rare to have such a long delay as occurred in the present case when strychnia is taken in solution, and not accompanied by morphia or any drug of antagonistic action.

The diagnosis, at the time I saw the case was not very difficult, for the history was given succinctly, and although the onset of the symptoms was apparently delayed, the presence of the slight convulsive tremblings, which were altogether unlike those of hysteria, in being of tetanic character rather than alternate tonic and clonic, placed the diagnosis on a firm footing, in spite of the fact that the pupils remained dilated in the intervals between the convulsions.

As to the treatment adopted, the subcutaneous injection of morphia was certainly in the right direction, but possibly should have been exhibited in fuller dose. Had I known that so little strychnia remained in the stomach as the analysis of the materials removed by the pump showed, I think I should have left alone the emptying of that viscus, and have confined my attention to the subcutaneous administration of antidotes, such as morphia and chloral, and to the exhibition of chloroform by inhalation. In the circumstances, however, as I have already pointed out, I believe myself to have been entitled to act as I did, especially as the only harm which could accrue from washing out the stomach was that which might arise from the oesophageal tube provoking a convulsion. In the present case the clearance of the stomach was completed, and the tube removed before the appearance of the final spasm, with the causation of which the use of the tube could not therefore be associated.

The time at which death occurred and the post-mortem appearances were in accordance with those observed in similar cases of poisoning where death took place before extreme exhaustion set in.

Subjoined is an account of several vermin-killers, containing nux vomica or strychnia, which are in use in this country, and appended to the remarks on Steiner's vermin-killer is an analysis of that compound, which I made in the medical jurisprudence laboratory of the University.

Vermin Killers.—All of these are made on a large scale for commercial purposes. Their component parts are therefore but imperfectly mixed, and the amount of material allotted to each packet is but a rough approximation to the exact quantity intended. The percentage of active ingredient is consequently liable to much variation, and hence the great diversity in the chemical analysis.

1. *Battle's Vermin-Killer* is probably as well known and as variable as any. Tardieu's analysis makes it contain—

Strychnia, ...	0.10
Potato starch, ...	1.00
Prussian blue, ...	0.20

1.30 gramme.

That is, each packet weighs 19 grains, and contains about $1\frac{1}{2}$ grain of strychnia, or about 7.7 per cent. (Wynter Blyth's *Practical Chemistry*, p. 317). Dr Letheby, on the other hand, found in it 23

grain of strychnia—a quantity equal to a threepenny packet bought by him in 18 grains, but a sixpenny packet only 23 grains (Browne and Stewart's *Trials for Murder*, 1824) found this vermin-killer to consist of 1 blue, and crystallized strychnia. The former contained 15 grains, the sixpenny 30 grains; the latter was 1·6 grains, equal to 10·69 per cent.

The powder consists of 5 per cent. strychnia, mixed with soot (Guy and Ferrier, *Forensic Med.*, sometimes with Prussian blue (Taylor). Dr. Ferrience, 2nd edit., vol. i. p. 409) found the powder to be about a drachm, and contain 2 to 3 grains. A threepenny packet contained about half as much as a sixpenny packet (Browne and Stewart's *Trials for Murder*, 1824). It is found that a threepenny and a sixpenny packet each contain 15 grains. One of these contained flour, the other, but no strychnia; the other flour, carbonate of barium.

The powder contains about $\frac{1}{2}$ grain of strychnia in each packet (see *to do in Cases of Poisoning*, 4th edit.,

Insect Killer contains in each packet $\frac{1}{2}$ grain (see *to do in Cases of Poisoning*, 4th edit., April 1856).

It consists of 1 oz. of nux vomica and 1 lb. of flour, containing 1 per cent. of nux vomica. Since the powder contains 1 per cent. of nux vomica is .4 per cent., and of strychnia is that this powder contains 1·6 grains, equal to 10·67 per cent. brucia (Wynter, 1817).

The powder weighs 28 grains, and is found in *Hunter's Infallible* also contained in *Trials for Murder by Poisoning*, p.

which I had not heard until the present time. I find no reference in literature, and 1s. In specimens bought by me, the packet weigh 6·48 grains, and a shilling packet I was unable to open. The penny packages weighed 9·14 grains, giving an average of 9·66

grains. The powder, which adheres to the glass, but has a somewhat bitter taste, or shows it to be composed of flour, strewn a few white crystals, and crystalline particles. With

250 $\times$ the granules, as pointed out to me by Professor MacLagan, have the appearance of arrowroot starch; and that they were starch was shown by their behaviour with diluted tincture of iodine. When a weak solution of iodine stood in contact with the powder for a few minutes, a strikingly characteristic reaction was obtained, the starch assumed a violet blue colour, the white crystals became tinged of a light yellow, exactly like the tinging given to crystals of strychnia similarly treated, while the dark blue crystals, unaffected in any way, stood out definitely from the rest of the field. From this it was accordingly evident that the powder consisted of three ingredients, one of which was a particular kind of starch.

A grain of the powder was now shaken up with an ounce of distilled water and allowed to settle for twenty-four hours, when it gave to the water a very faint blue tinge, and a distinctly bitter taste like that of strychnia, though very little of the powder appeared to have become dissolved in the water. The solution thus obtained was strictly neutral. Half of it evaporated down, and tested in the usual way with sulphuric acid and bichromate of potash, gave the play of colours characteristic of strychnia. The other half, when similarly evaporated down and treated with nitric acid, gave no reaction for brucia. The white crystals were therefore those of strychnia.

It remained now only to determine the composition of the third ingredient of the powder, the blue colour of which was suggestive of Prussian blue or ultramarine. Another grain of vermin-killer was accordingly shaken up with an ounce of distilled water, and to this were added a few drops of diluted sulphuric acid. The blue colour of the powder slowly disappeared, and sulphuretted hydrogen was given off, as evidenced by the smell and by the browning of a piece of bibulous paper, which had been moistened with acetate of lead. The reaction of a metallic sulphide thus given indicated the presence of artificial ultramarine, which is a complex substance containing a double silicate of alumina and soda in combination with a metallic sulphide, and which is frequently enough used commercially as a cheap colouring material.

In confirmation of the foregoing results, a few grains of the vermin-killer were now incinerated on a platinum knife. A strong smell of burning carbonaceous matter was evolved, and there was left a residue of a deep blue colour, like that of the colouring matter of the original powder as seen microscopically. Under 250 $\times$ this residue was found to be simply the blue crystalline particles of artificial ultramarine already referred to, and treatment of this with a diluted mineral acid gave the reaction just mentioned. Qualitative analysis thus proved the vermin-killer to be composed of strychnia diluted with arrowroot starch, and coloured with artificial ultramarine.

To estimate the relative amount of the ingredients was the next step. I took, accordingly, a threepenny powder, transferred it to a platinum capsule, and found it weigh at the ordinary temperature 9·14 grains; warmed the capsule in a hot chamber, and found the loss from moisture ·47 grains. This result was quite in accordance with that obtained from warming two other specimens of the powder, one of which, weighing 10·33 grains, lost ·52 grains of weight, and the other, weighing 12·18 grains, lost ·63 grains of weight,—results which, if reckoned for 9·14 grains of the powder, would give loss by warming ·461 grains and ·472 grains respectively.

The 8·67 grains remaining were then placed in an ounce of distilled water, to which 2 minims of strong sulphuric acid had been added. The blue colour disappeared quickly, sulphuretted hydrogen was evolved, and a white deposit was left at the bottom of the fluid. This deposit was filtered, washed carefully, dried, and found to weigh 7·57 grains. Microscopically the deposit consisted of grains of starch in a somewhat swollen condition, mixed with a very small amount of amorphous and semicrystalline material; and chemically it gave all the reactions of starch, being insoluble in cold, but soluble in warm water, and coloured blue by iodine. The semicrystalline *débris* consisted of dust, which is found in all preparations not chemically pure, and of the deposit obtained from the action of the sulphuric acid on the ultramarine of the powder.

To ascertain the relative weights of the starch and of the *débris*, I proceeded to determine the quantity of colouring matter present in the vermin-killer. In order to do that I carefully incinerated a twopenny powder (weighing 6·48 grains), and found that 0·15 grains remained; and then a threepenny powder (weighing 9·51 grains), and found that 0·20 grains remained. This, calculated for 9·14 grains of vermin-killer, would give a residue of 0·19 grains of colouring matter, which amount, when weighed out and acted on by sulphuric acid, gave 0·04 grains of a white deposit. The starch in this sample should therefore be reckoned 7·53 grains, and the *débris* 0·04 grains, part of which is deposit from the colouring matter.

Returning now to the acid solution which had passed through the filter, I added ether, and then sufficient ammonium hydrate to render the mixture alkaline. After brisk agitation I drew off the ethereal fluid, and repeated the addition and withdrawal of the ether, until a quantity drawn off gave no reaction for strychnia with sulphuric acid and bichromate of potash. The ethereal washings were then evaporated down, and the material which had been dissolved out thereby was found to weigh ·91 grains. This residue was crystalline in appearance, and gave all the reactions for strychnia, but none of those for brucia.

If, now, we compute the relative constituents of the three-

penny powder weighing 9·14 grains from the foregoing analysis, we find

Moisture,	.	.	.	0·47
Arrowroot starch,	.	.	.	7·53
Strychnia,	.	.	.	0·91
Artificial ultramarine,	.	.	.	0·19
				9·10

So that Steiner's vermin-killer contains approximately 10 per cent. of strychnia.

VI.—ON RHEUMATIC HYPERPYREXIA.

By HENRY BARNES, M.D., F.R.S.E., Physician to the Cumberland Infirmary.

(Read before the Carlisle Medical Society, 12th November 1885.)

IN the course of an attack of acute rheumatism, the sudden supervention of hyperpyrexia, associated as it is with delirium and other nervous symptoms, constitutes a most formidable complication, and one which, until within the last few years, usually ended in death. Many such cases are described by the older writers, and the theory of a sudden metastasis of the inflammation from the joints to the brain was put forward as an explanation. In a clinical lecture on cerebral rheumatism, Trousseau (vol. i. p. 513) describes the various cerebral complications which he has seen in rheumatic fever, but does not seem to have been familiar with the symptom of hyperpyrexia. Of the delirium he says it has nothing peculiar about it, but resembles that which occurs in typhoid fever or variola, with this difference, that it runs a very acute course, and usually ends in death. A German physician, Dr Kreuzer, in 1866, and Dr Sydney Ringer,¹ in 1877, were the first to draw attention to the very high ranges of temperature invariably occurring in these cases, and they also referred to their fatal character.

The symptoms and post-mortem appearances which have been noted are as follows:—There is great thirst, with a dry brown tongue; anxiety, restlessness, and insomnia; a dry burning skin, or more frequently profuse perspiration; often a miliary rash, the vesicles resting on an injected base, giving the skin a mottled appearance, sometimes mistaken for the rash of typhus; the joint pains may persist, or there may be a sudden cessation of them; there is acute delirium, followed by stupor, coma, and sometimes by convulsions. The temperature may rise from 104° to 110° or 112° in a few hours. The general condition of the patient resembles one suffering from typhus, and Murchison² mentions

¹ *Medical Times and Gazette*, 1867, vol. ii.

² *Lancet*, p. 170.

that he has been called into consultation in such like cases, on the supposition that it was really typhus which had supervened in the course of acute rheumatism. Cardiac complications may be present or absent, but, if present, are usually slight in character. The symptoms may come on at any period of the disease, early in the case, when the articular inflammation is at its height, or when convalescence is established. The post-mortem appearances are similar to those found in typhus and other forms of blood poisoning. There are no marked visceral lesions; there is rapid decomposition of the body; dark fluid blood; staining of the lining membrane of heart and large vessels; hypostatic congestion of lungs; a large soft spleen; granular degeneration of heart and voluntary muscles. For some years after the appearance of Ringer's paper many cases similar to his were described by Weber, Sanderson, Murchison, Jenner, and others, but the result of treatment seemed to be most unsatisfactory. Writing in May 1870, Murchison says that "the prognosis in these cases is always bad. Death occurs in a few days, if not within a few hours of the commencement of the cerebral symptoms." A few weeks later, in the same year, Dr Wilson Fox published a case, in which, although finally unsuccessful, such marked benefit followed repeated immersion of the patient in the cold and tepid bath, that he was encouraged to try this plan further. And in 1871 he placed on record in the pages of the *Lancet* two cases in which recovery followed the external application of cold water, in one of which the temperature reached 110° , and in the other $107^{\circ}3$. Commenting on these cases, he says he had not known any case of rheumatic fever end in recovery in which the temperature had reached 106° , and that cases in which recovery follows very rarely reach such a high range. As a rule the degree of pyrexia in rheumatic fever bears some proportion to the number of joints affected, and to the intensity of inflammation. In ordinary cases the temperature runs up to 102° , or even higher, on the first day, but there is no typical range. Evening exacerbations may bring it up to $103^{\circ}5$ or 104° . There are sometimes periods of intermission. The onset of complications is usually attended by a rise in the temperature, but this is never great unless the case turns out to be one of hyperpyrexia with delirium. It is a matter of importance to ascertain in what kind of cases such a complication is likely to arise. The onset of grave symptoms is usually sudden. Dr Wilson Fox collected twenty-one instances in which the temperature rose suddenly from 102° or 105° to 109° , 110° , and 111° , and where the duration from the date of the rise of temperature to death was in one case only two hours ($103^{\circ}5$ to 109°); in another four hours and a half ($104^{\circ}8$ to 109°); in another, seven hours (105° to 110°); and in a fourth, eight hours ($102^{\circ}2$ to $109^{\circ}5$). In eleven cases the period varied from nine to sixteen hours. Since the appearance of Dr W. Fox's paper, many

cases of the successful and unsuccessful use of the cold bath treatment have been put on record, and before entering on an analysis of them, I propose to report briefly one which came under my observation, and where, I am glad to report, the result was satisfactory.

C. L., æt. 20, a domestic servant from Stanwix, was admitted into the Cumberland Infirmary under my care on July 4, 1883, complaining of pains in knees, ankles, shoulders, elbows, and fingers. She does not know how she caught cold, but has been troubled with rheumatic pains for the last month, yet was able to do her ordinary work up to the date of her admission. She reports that she was laid off work for a fortnight, about three years ago, with rheumatic pains.

On admission, patient is described as a stoutly-built, well-nourished girl. The pains are not so bad as they have been. There is slight œdema of left leg, almost none in the right. The pulse 80, and the temp. $99^{\circ}1$. The urine is not albuminous. To have 20 grs. of salicylate of soda three times a day. For the first week the patient seemed to be progressing favourably. The morning temperature was always normal, and the evening temperature between 99° and 100° . On the 10th, however, the hands are noted as painful, and it is also noted she has been perspiring. A small blister was ordered for the hand. In the evening of the same day the pain in the arms had increased, the temp. had gone up to 100° ; the salicylate was ordered to be given every four hours, and an hypodermic of gr. $\frac{1}{4}$ of morphia was given. On the 11th the pain is very bad in arms and legs; is perspiring freely; morning temperature $99^{\circ}7$, vesp. 101° . On the 12th a harsh mitral bruit was first noticed; tongue coated, pains no better; vesp., tossing in a restless way, sighing respirations, no joint effusion; temp., m. $99^{\circ}8$, vesp. 101° . On the 13th, is still perspiring freely, restlessness continues, delirium has set in. The cardiac bruit still continues; the salicylate was stopped, and 3 gr. doses of quinine, with 3ss. potass. bicarb. ordered. The temperature record showed an upward tendency. At 5 A.M. it was $102^{\circ}3$, at 11 A.M. $103^{\circ}8$, and pulse 138. My colleague, Dr Lockie, saw the patient at the morning visit, and it was agreed that if the temperature reached 106° , wet packing should be tried. At 2.15 P.M. it was $104^{\circ}3$, at 3.15 P.M. $105^{\circ}5$, at 4.15 P.M. it reached $106^{\circ}3$. Wet packing was then commenced by means of a sheet wrung out of cold water. The day was warm and the water not very cold, so that although the changes of sheet were frequently made, the temperature did not come down quickly. At 4.45 P.M. it was $104^{\circ}4$, at 5.45 P.M. $104^{\circ}2$, and at 6.45 P.M. it nearly reached 104° . At this point the sheets were wrung from ice cold water, and after being applied, lumps of ice were rubbed on the outside of the sheet. This had the effect of quickly bringing down the temperature, and in little more than an hour it reached 99° . The packing was then discon-

tinued, and the patient quickly dried and placed in blankets. During the process of the packing the patient became more conscious, and seemed to enjoy the cold pack very much. Towards the end, after nearly four hours in the pack, she felt rather uncomfortable and chilly. On the 14th—has had a restless night; is still delirious, and gives occasional loud screams. She has had 18 grains of quinine since yesterday, but as the last dose was followed by vomiting, the medicine was discontinued. She can be roused from her delirium, and replies correctly to questions. The temperature, which at 2 A.M. was $99^{\circ}8$, rose to $101^{\circ}3$ at 11.15. The pulse was 102. A draught of chloral and bromide of potass. was ordered. On the 15th—she says she has had an excellent night, and is free from pain when the legs are quiet, but has some pain on movement. There is slight cough, with sibilant rales in chest. Pulse 68; temp. $98^{\circ}6$, vesp. $99^{\circ}5$. From this date her convalescence progressed satisfactorily. The temperature never rose above the normal, and she was discharged cured on the 15th August.

Reflecting upon the narrative of this case, there seem several points worthy of observation. Here we have an apparently mild case of acute rheumatism suddenly developing the grave complication of hyperpyrexia. In a few hours the temperature exceeds that from which Dr Wilson Fox says he has never seen recovery before the cold bath treatment. Why is it that hyperpyrexia arises in some cases and not in others? What are the predisposing causes of this condition? and what is the result of treatment? With a view of ascertaining some information on these points, I have made an analysis of the cases which have been published in the medical journals to which I have access, and have limited the period of inquiry to that which has elapsed since Dr Wilson Fox's paper appeared.

The Clinical Society of London some years ago instituted a similar inquiry, and published a report in the *British Medical Journal* for 1882, signed by Drs Southey, Ord, Weber, Taylor, and Coupland. In that report 67 cases, mostly unpublished, were analyzed, but as it is possible that some of the published cases included in their investigation are also included in mine, I have not added those which I have collected to them for the purpose of making an exhaustive comparison. In the main, however, the conclusions to which I have arrived closely correspond with the conclusions of their report, but it should be stated that whereas they have examined into the record of all cases of rheumatic fever in which hyperpyrexia occurred, I have only selected those cases of rheumatic hyperpyrexia which have been subjected to treatment by the external application of cold. These are 24 in number, and show 19 recoveries and 5 deaths. In the cases which recovered, the highest temperatures reached were 110° in one case, 109° in one case, and $108^{\circ}2$ in one case. In the fatal

cases, the highest temperatures were $111^{\circ}5$, 110° , $109^{\circ}2$, $107^{\circ}4$, and $106^{\circ}8$.

The complication seems to have come on in all kinds of cases and under different kinds of treatment, including alkalies, salicin, salicylic acid, and salicylate of soda. It is a point of importance to ascertain whether the cases which develop hyperpyrexia differ in any degree from the ordinary class of cases of acute rheumatism, and present any features which may enable one to be on the lookout for such a complication. An exhaustive comparison has been made with reference to many points. As regards the season of the year, it appears that taking the decade 1870 to 1879, whereas acute rheumatism is more prevalent in the autumn and winter months, cases of hyperpyrexia were more common in the spring and summer months. The Clinical Society report says that this complication is more common in men than in women, being 64.2 per cent. of the former; but in the cases which I have collected, I find more women affected (14 to 10). In regard to age, the third decade of life furnishes most cases. Neither occupation nor family history seem to furnish any special predisposition, but a large majority of the cases were instances of a first attack of the primary disease. Of the complications pericarditis was more frequent, and endocarditis only a little less frequent than in rheumatic fever generally. Pleurisy and pneumonia are also mentioned as frequent complications.

Among the antecedents of such cases, chorea and scarlet fever were very unfrequent, and alcoholic intemperance not very common. As regards the symptoms present during the attack previous to the development of the nervous symptoms and the hyperpyrexia, no very constant condition has been observed. In some cases the articular pains have suddenly subsided, and have reappeared again when the critical symptoms have passed away. In others, the joint pains have been persistent throughout. Sweating is noted as having been persistent in a large proportion of cases, but in a few there has been a dry, burning, unspiring skin. Of the nervous symptoms delirium is the most constant, and usually coincides with a high range in the temperature; and of other nervous symptoms the following have been noted, viz., insomnia, restlessness, muscular tremors, subsultus, coma (a late symptom), headache, drowsiness, giddiness, convulsions, hesitancy of speech, chorea, and hyperæsthesia.

As a practical result of a consideration of all that I have observed of such cases, and of all that I can find written, I venture to urge that in all cases of acute rheumatism, as soon as there is any indication of nervous symptoms, and particularly in patients of a high degree of nervous susceptibility, a careful watch should be kept on the temperature, and it should be taken at frequent intervals. As soon as it shows a tendency to rise to the hyperpyrexia range, preparations should be made for the external application of cold. As

I have shown, dangerous symptoms may be sudden in their onset, and drug treatment seems entirely to fail to arrest them. The question as to what point the thermometer should reach before cold is applied is an important one, and the general condition of the patient will also have to be considered before coming to a decision. In his original paper Dr Wilson Fox fixed the point at 107°, but this is obviously too high, and in a subsequent paper he fixes it at 106°. In their report the committee of the Clinical Society state that the temperature cannot safely be allowed to rise above 105°, and this also would be my recommendation, as the chances of success appear to be greater the earlier the cold bath treatment is commenced. Of all means of applying cold the graduated bath gradually cooled from 90° to 70° is the best, but as this is not always available, the cold pack, ice-bags or cold affusion may be tried. Frequent testing of the patient's temperature is necessary during the process, and as soon as the reduction of temperature to 100° or 99° is effected, the treatment should be suspended, the patient should be placed in warm blankets, or otherwise dangerous symptoms of collapse may supervene.

VII.—AN UNSUCCESSFUL CASE OF ALEXANDER'S OPERATION.

By SKENE KEITH, M.B., F.R.C.S.E., Special Assistant Surgeon, Royal Infirmary.

(Read before the Edinburgh Obstetrical Society, 12th May 1886.)

In September 1884, Dr H. A. Peddie took me to see a patient with a very well-marked retroversion. For nine years she had suffered from frequent attacks of sickness, and from constant bearing-down pain; and during six of those years had been treated for dyspepsia. Then she was told that her womb was twisted. The cervix was dilated, the interior of the uterus scraped, and nitric acid was applied. This treatment not being followed by cure, she consulted Dr Peddie, who, after an infinite amount of trouble, succeeded in getting the uterus to keep in good position. Impregnation followed. Three months after the child was born the uterus had again become retroverted, and nothing would keep it right. Numbers of pessaries were tried; she was an in-patient in the Infirmary for six weeks, and she was no better, and at last Dr Peddie came to the conclusion that nothing would do her any good except removal of the ovaries. The patient was very thin; she was of no use; she lay in bed most of the day, and she was scarcely ever free from sickness. The uterus was large, retroverted, and the fundus lay on the pelvic floor. To make absolutely certain that the sickness was caused by the pelvic condi-

tion, I packed the vagina with oakum, first turning forward the uterus and keeping it carefully in position. As long as the uterus kept off the pelvic floor she was quite well. This experiment was repeated several times.

The case seemed to be a perfectly fair one to try Dr Alexander's operation of shortening the round ligaments. This was done in October 1884, exactly as described by Dr Alexander, except that the slack of the ligaments was cut off and not packed into the wounds. The patient was not allowed to sit up in bed, even, for five weeks. The sound then passed with a slightly exaggerated curve forward, and she felt quite well.

Nine weeks after operation patient came to say that she had been feeling a little sick. The uterus was a little low in the pelvis, and the Hodge which she had been wearing since the operation was changed to a ring with relief. In another three weeks she was back again, as ill as she had been before the operation, and the uterus was found to have got back into its old position. Pessaries were again tried for four months; but as there was no improvement, the ovaries were removed in May 1885, the connexion of the right one being fixed at the bottom of the wound, in a clamp. There was less disturbance than after the former operation, and now, after a year, she is quite well and the uterus keeps in position. It would have been most interesting to have allowed the uterus to drop back into the pelvis, but it would have been too hard on the woman to run the risk of a second failure.

The great objection to Alexander's operation seems to be that one has no guarantee that the ligaments which stretched once may not stretch again. In the case I have narrated this appears to have occurred without any special reason, although the uterus had become decidedly reduced in weight, and nine weeks after the first operation the sound passed scarcely $2\frac{1}{2}$ inches. The ovaries were fairly healthy, but the Fallopian tubes were long and somewhat dilated.

VIII.—NOTE ON "CACUR" (*CUCUMIS MYRIOCARPUS?*), A KAFFIR EMETIC.

By G. ARMSTRONG ATKINSON, M.B., Assistant to the Professor of Materia Medica in the University of Edinburgh.

(From the Materia Medica Department, University of Edinburgh.)

THE extensive use of emetics in the treatment of disease by the Kaffirs of South Africa is well known to all dwellers with or travellers among these races. One of their most frequently employed emetics is a green, or yellowish-green fruit known as cacur, cacuo, or small bitter apple. A small quantity of this, with some of the leaves and stalks of the plant, was recently given to me by

Mr J. A. B. Bayley, with the statement that the Kaffirs heat the fruit, squirt out the contents into their mouths, and swallow the material thus expelled. In a quarter of an hour, or thereabouts, emesis occurs. Two of the pepoes are so administered in the case of an adult, one in the case of a child. The plant grows largely in gardens as a weed, especially where melons and pumpkins are cultivated. The fruit is caducous, and, as I have mentioned above, is used by the natives when green or yellowish-green. When ripe it is quite yellow. It never spontaneously ruptures as *ecballium* fruit does. The plant was obviously one of the *Cucur-bitaceæ*, and Professor Oliver, of Kew, pronounced the pepo to be almost certainly the fruit of *Cucumis myriocarpus* (Naudin)—a green annual growing, according to Harvey and Sonder (*Flora Capensis*, ii, 495), on Table Mountain, near Genadenthal (Genadendal), at Buffelfontein, in the districts of Uitenhage and Albany. Mr Bayley states that the plant from which the specimen he gave me was obtained grows not only where Harvey and Sonder mention, but throughout Cape Colony and the Free State generally. This identical specimen came from the midland province. The plant produces fruit very abundantly,—subglobose pepoes, about the size of a large gooseberry, green when unripe, yellow when mature, and beset somewhat sparingly with short soft prickles. Each pepo weighs from 60 to 100 grains, and on section presents three parietal placentæ, with numerous seeds embedded in a soft viscid pulp, which becomes much more fluid when warmed—possibly the object of the heating practised by the Kaffirs. The pulp has a faint cucumber-like odour, and is decidedly, but not intensely bitter. The rind is soft, and can only be peeled off with considerable difficulty; it, too, is somewhat bitter, but much less so than the pulp. The testa of the seeds, which are exalbuminous, have a feebly bitter taste; the seed otherwise is tasteless. The plant, apart from the pepoes, seems to me inactive.

To test its action I took, on an empty stomach, 20 grains of the fresh pulp, and in about half-an-hour felt somewhat nauseated, but was not sick. Four or five hours afterwards I had some griping pains, and two or three hours after this was slightly purged. To a large fasting dog I administered, bruised with water, a pepo weighing 69 grains. No sickness was produced, and the dog seemed generally unaffected. In about eight or nine hours very watery diarrhœa occurred, which lasted for well on to twenty-four hours, the evacuations being bilious looking and containing much mucus. Some days later two pepoes, weighing together 118 grains, were administered in a similar manner, and in twenty minutes very free emesis occurred, the dog vomiting several times, the last vomit containing a little blood. Considerable salivation was also produced at the same time. After the vomiting ceased the animal rapidly returned to its normal condition, and no purgation followed.

From these brief notes it will be seen that the action of the drug

is that of an emetic and of a cholagogue purgative; purgative in non-emetic doses, and in doses sufficient to produce emesis causing purgation, if sufficient of the active principle has been retained. Its emetic action is probably local.

As to the chemistry of the plant,—I had, unfortunately, not sufficient material to make a satisfactory examination, but so far as I went I could find no trace of any alkaloid, the activity seeming to depend upon a bitter neutral principle, readily soluble in water, or in 80 per cent. alcohol. Professor Dickson has promised to grow the herb in the Botanic Garden, and Mr Bayley hopes to provide me with a further supply of the fruit next year, so that I may then finish the investigation.

Part Second.

REVIEWS.

The Principles and Practice of Medicine. By the late CHARLES HILTON FAGGE, M.D., F.R.C.P., Physician to, and Lecturer on Pathology at, Guy's Hospital; Examiner in Medicine in the University of London. London: J. & A. Churchill: 1886.

THIS work consists of two volumes, and extends over eighteen hundred closely printed pages. In the preface we are informed that the greater part was in manuscript when the pen dropped from the author's hand. The section on Diseases of the Heart was not completed, and that on Diseases of the Skin was not commenced. Dr Wilks has completed the former; while the editor, Dr Pye-Smith, has supplied the latter.

The range of the work is the same as that of other treatises on the Principles and Practice of Medicine, while owing to its size greater freedom has necessarily been obtained for a more elaborate treatment of the varied subjects with which such a work deals, than could be possible in one of more restricted dimensions. But this is one of the few large works which one would gladly have had even fuller; its whole contents are of such a quality that curtailment in any section would have been a loss.

It is quite impossible in the space at our disposal to critically review the special teaching of the various chapters, and yet without this there is difficulty in conveying anything like an accurate impression of what the book is. Even to class it as the best work on its subject in the English tongue, the product of one brain, would but imperfectly express our estimate of it. There is an individuality breathing through every page of it, which requires perusal to understand and to appreciate, and is too subtle a quality to be conveyed even through the medium of a sympathetic

reviewer. Some books have this strongly marked, and this is one of them. It is the fruit of much of the best labour of twelve years of the author's manhood; and the best labour of a mind of this type does not lead to commonplace results. It bears the stamp of having been no mere book-making undertaking. In every chapter the impress is perceptible of a man doing work for the love of it, and giving out what measure of knowledge he has gained, and of truth he has found. Even the steps by which the author reached the ground he occupied are clearly cut; there is the brief but keenly critical historical review, with the strictly accurate abstract of the work of others, which distinguishes the man of true literary faculty from the partial gleaner whose gleanings often bear the appearance of falsehood as they are gathered for the support of pet theories or personal leanings; there is the accurate knowledge of and practical familiarity with the results of disease which characterize the pathologist and morbid anatomist; there is the judicious and whole-hearted appreciation of the work done by others; and there is added to these wide experience of disease in its clinical aspects, the experience of a man with the acute perceptive faculties and the instincts which distinguish the true physician, and which lead him to results hardly attainable by his less highly endowed fellows, but which are curbed by and subjected to the scrutiny of the higher mental faculties. These working in unison combining, modifying, and reconciling the facts of morbid anatomy with those of clinical observation gave, it appears to us, an insight into diseased processes which is only possible to the man who is both a pathologist and a physician, and is but rarely attained by any man.

If the man be thus evident in the work he has left, the work cannot but be excellent. It is too large and too elaborate for the junior student and the man working for a *pass*; to the senior student it provides all that is needful; to the practitioner it will be invaluable as a book to be constantly consulted, for he will find here disease described "from life," not only the typical stereotyped thing of the schools, but as it appears to the man who has eyes which see, and ears which hear, and a pen which can pourtray.

We do not yet see eye to eye, and therefore there are some views which we might not endorse, but even these are few and comparatively unimportant. There is indeed only one section to which serious objection might be taken, and there is little doubt that had the section to which we refer, namely, that on Cardiac Disease, been completed by the author, it would have occupied more than the sixty-seven pages which are devoted to it as the book stands. Skin Diseases have 140 pages devoted to them, and Dr Pye-Smith has done this part, as well as the editorial work, well.

We cannot congratulate the publishers on the get-up of the volumes, neither the binding, the paper, nor the type being on a level with the excellence of the literary work.

The International Journal of the Medical Sciences. Vol. I. Edited by J. MINIS HAYS, A.M., M.D., and MALCOLM MORRIS. London: Cassells & Co. Philadelphia: Lea Brothers. 1886.

THE *American Journal of the Medical Sciences* in its English dress will be welcomed by practitioners on this side of the Atlantic. The present volume, which contains the first two quarterly numbers, is appropriately opened with an article by Sir Henry Acland on "The Modern Medicine of the English Speaking Race," in which he justifies the issue of the Journal as a common vehicle of medical thought for all who use the English tongue. Throughout the rest of the work papers by American authors slightly predominate, but among the English writers are Sir James Paget, Sir Andrew Clark, Jonathan Hutchinson, Matthews Duncan, Sir William Gull, and Byrom Bramwell. As becomes a quarterly journal, the reviews are long and elaborate. The summary of progress in the various departments of scientific and practical medicine is in the hands of able practitioners. We heartily wish the undertaking entire success.

The Asclepiad: a Book of Original Research and Observation. By BENJAMIN WARD RICHARDSON, M.D., F.R.S. No. 10., Vol. iii.

DR RICHARDSON is always original, often practically instructive, and all his work is that of a master in the art of writing. His biographical sketches of eminent surgeons, anatomists, and physicians are lifelike and amusing. In this number he publishes an original paper, entitled "The Poverty of Wealth," which, in the boldness of its paradox, in the wisdom of its advice, and the startling character of its prophetic utterances, has a flavour of Hebrew prophecy and Puritan theology rare in this nineteenth century.

Hunterian Lectures. On some of the Injuries and Diseases of the Neck and Head, the Genito-Urinary Organs, and the Rectum. Delivered before the Royal College of Surgeons of England, June 1885. By EDWARD LUND, F.R.C.S., Consulting Surgeon to the Manchester Royal Infirmary. Cr. 8vo., pp. 113. London: J. & A. Churchill, 11 New Burlington Street: 1886.

THE only fault that we have to find with these lectures is that there are not more of them. In the subjects with which they deal they embody for us the ripe experience of a wise surgeon who can express his thoughts in a no less pleasant than instructive way. He tells us frankly where he has made errors in diagnosis or treat-

ment, in order more effectually to warn others from doing the same, and illustrates almost every point by an appeal to an actual case. As we read, our interest is maintained and our confidence in the writer established. Almost every page gives us some new and suggestive explanation of a common fact, whether in the symptoms of disease or in its treatment. We are made to think, and we are grateful for it. Those who have not already read these lectures have a pleasure in store for them which they are not wise to postpone.

Joint Diseases: Treatment by Rest and Fixation. By Dr De F. WILLARD. Philadelphia: reprinted from the *New York Medical Journal* for December 5th, 1885.

DR WILLARD, like many others, has faith in the virtues of rest. In his pamphlet he suggests many simple and apparently useful methods of treating affections of joints. One of the best of these is described as follows:—

“For use by day a narrow platform is constructed of light boards, with a handle at each end, and on it is placed a firm hair mattress. To one end is attached a grooved pulley-wheel, over which plays the extension cord, with from two to ten pounds attached—comfort regulating the weight. This bed can easily be picked up by two persons and laid upon rests beneath the trees or in the porch, or it can be placed and locked upon a child’s express-waggon, or, better, upon a frame waggon with easy springs. If removal is painful, the entire fixture can be laid upon the couch at night, but ordinarily the sliding upon a bed is not harmful, provided extension is maintained.”

This seems an excellent and simple method of dealing with hip-joint cases.

Surgical Handicraft: A Manual of Surgical Manipulations, Minor Surgery, and other matters connected with the work of House-Surgeons and Surgical Dressers. With 233 Illustrations on Wood. By WALTER PYE, F.R.C.S., Surgeon to St Mary’s Hospital and to the Victoria Hospital for Sick Children, etc. 2nd Edition. Pp. 546. London: Henry Kimpton, 82 High Holborn, W.C.: 1885.

THE first edition of this book was published in September 1884; the preface to this, the second edition, is dated October 1885. Such a rapid sale of the first edition is in itself a strong testimony to the favour with which the work has been received by the profession. The subject matter is divided into nine sections, on the following subjects:—The arrest of hæmorrhage; apparatus for restraint and support (bandages, splints, etc.); fractures; wounds, ulcers, burns,

etc.; cases requiring prolonged or mechanical treatment; certain emergencies, surgical and general; administration of anæsthetics; extraction of teeth; and on some points in the practical management of aural cases; and minor surgery. There are, besides, four appendices, *e.g.*, a formulary; preparation of patients for operation; on the making of poultices and fomentations; and hints upon surgical case-taking.

The book can be recommended as a really useful one, containing much practical information, described in a clear and interesting way. Recent authorities have been consulted, so as to bring the matter well up to date. The illustrations are excellent, and have all the vividness of good life portraits. The presence of special chapters on subjects not usually treated of in works of this kind is a distinct advantage. Such are, one "on some of the principal drugs used internally for the arrest of bleeding," and one "on improvised splinting." Under the head of "Cases requiring prolonged or mechanical treatment," the various forms of splint for hip joint disease, including Thomas's hip splint, are described and figured. It is to be regretted, however, that the description of Thomas's knee splint has been omitted—the one is just as valuable as the other. The present edition is bound in a smaller and more convenient form than its predecessor, and is cheaper. It is likely to meet with a rapid sale.

Sore Throat: Its Nature, Varieties, and Treatment, including the Connexion between Affections of the Throat and other Diseases.

By PROSSER JAMES, M.D., Lecturer on Materia Medica and Therapeutics at the London Hospital, etc. Fifth Edition. Illustrated with Hand-coloured Plates. London: J. & A. Churchill: 1886.

In the new edition of this now standard work the principal changes will be found in the therapeutics of the volume, the chapter on general treatment in particular containing a large amount of new matter. The section on Rhinoscopy has been re-written, and a summary is given of the result of Mr Horsley's investigations on the thyroid gland. In the chapter on Laryngeal Phthisis practically no mention is made of the occurrence of bacilli in the laryngeal secretions. The presence of these must in future be demonstrated in order to have a diagnosis, particularly of cases reported as cured, accepted. In advising antiseptic inhalations Dr James does not advert to the fact that they have been shown by competent observers in this country to have little or no effect on the organisms peculiar to the disease. Probably this point will not be recognised till German writers have given it the artificial stamp of this generation. We observe that credit is given to Dr Heron Watson for having done extirpation of the larynx in 1866.

New Books on Bacteria and Myxomycetes.

Die Pilze oder Schleimpilze (Myxomycetes). Nach dem neuesten Standpunkt bearbeitet. Von Dr W. ZOPF. Privatdocenten an der Universität Halle. Mit 52 Holzschnitten. Breslau: Edward Trewendt: 1885.

Die Spaltpilze (Bacteria). Nach dem neuesten Standpunkt bearbeitet. Von Dr W. ZOPF. Mit 41 Schnitten. Dritte sehr vermehrte und verbesserte Auflage. Breslau: Edward Trewendt: 1885.

THESE two books are of a kind unfortunately all too rare in every department of science. It may be doubted whether, in the present state of research, when innumerable journals are teeming with new papers on every possible point of detail, more useful work can be done, at any rate by any one out of the very highest rank in science, than the careful compilation and co-ordination of this confused wealth of knowledge into manageable and accessible form. Such intellectual stock-taking is no mere work of scissors and paste; it requires at once thoroughness of special knowledge and clear grasp of general principle, keen critical faculty, and judicial fairness in exercising it; and it furnishes the best possible starting-point for new researches. Dr Zopf is to be congratulated on a much more than average measure of success in thus bringing together the knowledge of two groups of fundamental importance, the former especially to the cryptogamist, the latter to the pathologist and physician as well.

Our knowledge of the very remarkable group of *Mycetozoa* or *Myxomycetes* was founded by De Bary in 1864, in a still classical monograph, which has been succeeded by many special papers. These are incorporated in a clear account of the morphology and physiology of the group, followed by a systematic arrangement, and illustrated by excellent figures, drawn on wood by the author. Since the group is one which, on account of its extraordinary life history, has attracted, and must long continue to attract, much attention, not only from the botanist, but the zoologist and histologist alike, Dr Zopf's excellent monograph is certain to find a wide field of usefulness. It lacks nothing save a bibliography and index, which would greatly enhance the value of a future edition. Its companion volume, a manual of the *Schizomycetes* or bacteria, is already in its third edition. In addition to a carefully compiled morphological and physiological chapter, we have a brief account of the methods of investigation, followed by a systematic account of the genera and species. The latter is comprehensive and clear (for Dr Zopf's style has the merits, still too rare in German science, of conciseness and directness), but it is much to be regretted that the author has not given a full synonymy, nor even furnished the work with an index, as there is thus both difficulty and uncertainty in hunting

down a form perhaps familiar under some other name. The bibliography, however, seems fairly done, and the work can be unhesitatingly recommended alike to the student and the practitioner. Its extraordinary cheapness, too, is not the least of its merits.

Suicide: Its History, Literature, Jurisprudence, Causation, and Prevention. By WYNN WESTCOTT, M.B. London: H. K. Lewis: 1885.

THE author has written this book in the hopes of diminishing the amount of suicide. He has been encouraged by the consideration that there are but two books in the English language devoted entirely to this subject. He takes occasion to quote against Forbes Winslow's *Anatomy of Suicide* an unfavourable criticism from the *Athenæum*. About a more recent work on the subject Mr Wynn Westcott observes, "The thoroughly scientific statistical work of H. Morselli, of Turin, has been recently published in an English form, but it is hardly a readable book, consisting almost entirely of statistics; and the subject, moreover, is treated from an Italian standpoint." We have not got Forbes Winslow's book, but having read the learned work of Enrico Morselli, *Il Suicidio*, Milan, 1879, we cannot agree with this description. In his book of 512 pages, enriched with maps and statistical tables, Professor Morselli has room for every aspect of suicide. To say that it is "an almost entirely statistical work" is not giving a fair idea of the book, which has been translated into English in the international scientific series. It is a larger and more complete work than Mr Westcott's, and shows more learning and maturity of thought. Nevertheless, in our opinion 200 pages, the length of the essay under review, is quite enough for the subject; indeed, the author could have well made his book shorter, had he kept from introducing common-place reflections, and raising questions on matters where there can be no doubt whatever, such as "some sorts of fish, as salmon, have been noticed to throw themselves out of the water, but it seems very doubtful whether this act is meant to be suicidal." His list of notable suicides is either too long or too short,—too long, as it gives questionable cases like Richard II. of England, J. J. Rousseau, General Pichegru, and Abdul Aziz, the Sultan of Turkey, with obscure cases like T. Craddock, a baker, or W. Green, a weaver, who threw themselves off the London Monument, whilst it leaves out names like those of Charles Blount, the deistical writer, and Maitland of Lethingham, the celebrated Scottish statesman. A little more care on the part of the author would have saved him from making droll statements, such as that Goethe, in the Sorrows of Werter, "exalts suicide as the end of one's existence," or that the unfortunate Afghan surgeon, Mahomed

Ismail Khan, who poisoned himself in 1883, "could not return to his Indian home, having lost caste there." But Mohammedans have no caste, and Afghanistan is not in India. The author's experience as deputy coroner for Central Middlesex has enabled him to observe a large number of cases of suicide, and he found "that in 20 per cent. only had the deceased ever exhibited symptoms of insanity obvious to the friends and relations."

In this book the reader will find full information about the state of English law and the attitude of insurance companies in regard to suicide. We do not think writing books calling attention to the subject is the best way to dissuade people from destroying themselves. Religious influence is the most powerful deterrent, suicide being much rarer in strict Catholic countries, and amongst Mohammedans, as the canons of the Church and the Koran forbid self-murder, but it is met with in all countries more or less; and though it is absurd to hold that all who seek escape from the evils of life must be insane, suicide is generally the result of bad health and a morbid state of mind, which moral advice and religious faith have failed to combat with success.

Rome in Winter, and the Tuscan Hills in Summer; A Contribution to the Climate of Italy. By DAVID YOUNG, M.D., late Professor of Botany in the Grant College, Bombay. London: H. K. Lewis: 1886.

DR YOUNG, in writing this work, has attempted to supply a want which he considers exists in English medical literature for a work treating of Rome and its climate. He has been fortunate in hitting upon a very attractive title, and it may be said at once that he has produced an attractive work. But the *Tuscan Hills in Summer* receive by no means the same attention as does *Rome in Winter*, with which our author chiefly concerns himself. The scope of the book will be understood from the following passage in the preface,—"The principal elements in the climate are briefly described, the prevailing diseases are compared with those of England and northern countries generally, and the type of diseases likely to receive benefit in Italy is dwelt on at some length, while the sanitary state of the city, and the important and increasingly interesting subject of malaria are also considered." Dr Young is strongly of opinion that Rome is not the unhealthy city it is generally believed to be. He enters a vigorous protest against the habit of recording deaths as from "fever caught at Rome," when there is no evidence in proof of the statement, and nothing to show that the fever may not have been caught elsewhere. He points out that the death-rate from typhoid is lower in Rome than in any other European capital or Italian city, at the same time admitting that there is some ground for the belief that a fever does exist which is

neither malarial in any of its more commonly recognised forms, nor does it manifest all the symptoms which are peculiar to typhoid, but exhibits features pertaining to both these fevers, and therefore may have a relation to the one as well as to the other, and to this the name of Roman fever is popularly given. It has been called by Professor Baccelli a sub-continuous typhoid. A very interesting chapter is that on the water-supply of Rome. The results of the recent analyses by Professor Cannizzaro are summarized, but it is admitted that one of the four supplies (the Aqua di Trevi) runs some risk of contamination on its way into the city. The precautions to be adopted by the visitor to Rome, the kind of cases that are likely to do well, and the kind of cases that should stay away, are fully considered, while some little space is devoted to the description of summer quarters near to Rome itself and in Tuscany. The volume is one that ought to be read carefully by every medical man who desires to know something of climate as a therapeutical agent in the treatment of disease, and might with confidence be recommended to those who wish to visit Italy for their health's sake.

Hospital Sisters and their Duties. By EVA C. E. LUCKES, Matron to the London Hospital. London: J. & A. Churchill: 1836.

THIS is a careful and high-toned study of the work of a hospital sister. The general principles apply to all who have as nurses head charge of wards, though many of the details belong only to the London Hospital, from which the book issues. The writer has a thorough knowledge of her subject, a high ideal, and a clear view of how it is to be attained. Her own difficulties are apparent throughout the whole discussion, and one feels the urgency of her counsels to be dictated by a wearing experience. All the more is her tone of hopefulness and good-cheer to be commended. In the end one would go back to her starting-point and say, Spend the greatest strength on finding the right women and training them; when in office they will go beyond what you could require of them; they will be as "trees planted by a river." Sisters who need such "careful and troubled" directions are not of the right stuff, though the best might profit by a study of these chapters. The writer does well to liken the hospital household to a family. It is the best comparison possible, though it is not a perfect one. Few comprehend what it is and what it is not, but it begins to show itself, in its new development, something differing from all former, all other associations for work, more complicated, perhaps more delicate, than any.

In a new edition the book would be improved by greater conciseness, and by the correction of a few instances of slightly careless English.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LXV.—MEETING VII.

Wednesday, 3rd March 1886.—Professor GRAINGER STEWART, *President,*
in the Chair.

I. EXHIBITION OF PATIENT.

Mr A. G. Miller exhibited a WOMAN, upwards of seventy, who had recovered with a useful arm after a severe compound fracture of the ulna, complicated with a fracture of the surgical neck of the humerus. The injuries had been inflicted a fortnight before admission to hospital. The wound was putrid, and there was no attempt at union of the fractures. *Mr Miller* scraped the wound of the soft parts, removed portions of the ulna which were necrosed, and scraped out the medulla. The resulting raw surface, which was considerable, was dressed antiseptically, and healed rapidly. After six weeks the wound was healed and the humerus soundly united. The patient was shown three months after the injury, with the limb capable of performing all its movements fairly well.

II. EXHIBITION OF PATHOLOGICAL SPECIMENS AND DEMONSTRATIONS.

1. *Dr Noël Paton* showed a specimen of A LARGE GLIOMA growing from the upper surface of the cerebellum, chiefly from the left side, but extending over to the right side. The tumour extended from the anterior to the posterior border of the cerebellum, and extended deeply into the organ, destroying nearly one-half of its substance. Sections of the tumour exhibited under the microscope showed it to be composed of round cells with large single and double nuclei. The patient was a teacher of the piano, who had been ill for seven months before his death. His first symptom was a failure, after playing for some time, to properly co-ordinate the fingers of his left hand. After walking for long, his gait became somewhat unsteady. Throughout the early part of his illness he had no other sensory or motor symptoms, except severe fits of headache accompanied by vomiting. The fundus of the eye was normal. In the later part of his illness he suffered from squinting, from severe orbital neuralgia, and from epileptoid fits. *Dr Noël Paton* suggested that the slowness of the symptoms pointing to the implication of the cerebellum was due, firstly, to the comparatively slow growth of the tumour, and, secondly, to its implicating both sides and the anterior and posterior parts of the cerebellum about equally, and referred to Ferrier's conclusion in

regard to such symmetrical lesions of this structure in confirmation of this explanation.

2. *Dr Byrom Bramwell* showed—(1.) A series of MICROSCOPICAL PREPARATIONS, DRAWINGS, and PHOTOGRAPHS, illustrative of a remarkable lesion of the nerve centres in leucocythæmia. Numerous hæmorrhages, varying in size from microscopical extravasations to large masses of blood the size of a hen's egg, were scattered through the brain tissue. The bloodvessels throughout the nerve centres were enormously dilated and distended with white blood corpuscles. (The case is reported and the specimens figured in the *British Medical Journal*, 12th June 1886, page 1098.) (2.) A series of MICROSCOPICAL PREPARATIONS and DRAWINGS illustrative of calcareous degeneration of the cerebral bloodvessels (a detailed account of which appears at page 1 of this Journal). (3.) Two specimens of ANEURISM OF THE LARGE ARTERIES OF THE BRAIN, which had ruptured and produced meningeal hæmorrhage. (A detailed account of these specimens appears at page 4 of this Journal.)

3. *Note by Dr Woodhead on Dr Bruce's demonstration of Weigert's method of embedding and staining nerve centres.*—Dr Bruce, in his demonstration of Weigert's¹ method, pointed out the disadvantage of not being able to obtain serial sections by the celloidin method. In a recent paper Professor Weigert gives a method of mounting these celloidin embedded preparations in regular serial order, which is not only extremely useful, but may also be carried on with great ease and rapidity. The same method is even more convenient than the usual method for mounting ordinary sections. Glass plates of any size, according to size and number of sections to be mounted, are coated with photographic collodion (as for wet plate photography). They are then reared up against some object, and allowed to dry with the collodion side downwards. When dry these plates are ready for use. Slips of toilet paper (closet paper), about twice as broad as the sections, are then prepared. Commencing at the left margin one of these slips is placed lightly on the sections as they are cut, each succeeding section being placed to the right of its predecessor. Should the sections be curled up at all they are flattened out with a camel hair pencil moistened in spirit. The knife is also kept *slightly* moistened with spirit, any excess being allowed to run off from the tilted knife or taken up with a piece of blotting paper. As many sections as can be mounted on one glass are taken on the slips of paper (but there should never be more than a single row of sections on each slip).

¹ "Ueber Schnittserien von Celloidinpräparaten des Centralnervensystems zum Zuercke der Markscheidenfärbung." Von C. Weigert in Frankfurt, A.M. *Zeitschr. für Wissenschaft. Mikroskopie u. f. Mik. Technik*, Bd. ii., 1885, pp. 490-495.

The slips are kept moist, until they are to be used, by placing them on a sheet of blotting paper in a flat dish containing spirit, great care being taken that none of the spirit gets over the surface on which the sections are laid. In laying them down on this plate, the first row is placed furthest away with the first section at the left side, so that the succeeding sections follow on like words in a page of a book. These rows of sections are then placed on the prepared collodion plates (never more than one or two rows on each plate) sections down, the paper thus forming a covering. Gentle pressure is then applied to the paper over each section, after which, if it has been kept sufficiently moist, it can be pretty easily stripped off from the plate, and the sections are left in position adhering to the collodion. Any superfluous spirit is carefully removed with blotting paper. When the sections are quite dry another thin regular layer of collodion is poured over the sections, the plate is again tilted, and allowed to dry. The number of the row, etc., is marked with a pencil dipped in methyl blue, as soon as the collodion is dry. They may then be placed at once in the staining reagent, or if this is not convenient, they may be kept in 80 per cent. alcohol. When placed in the hæmatoxylin the film separates from the plate, which may then be removed from the staining fluid. The sections take on the stain exceedingly well. The after-treatment is as usual, but great care must be taken to wash the sections thoroughly (at least an hour in water frequently changed). The sections are trimmed under water with a pair of scissors, or the films are floated out on toilet paper and then trimmed. The trimmed films (without the paper) are then placed in 90 or 96 per cent. alcohol (*not absolute*), after which they may be manipulated freely and placed on the slide. The sections are cleared up with kreosote or with benzin and alcohol, in which fluids they must be left for a considerable time, in order that the collodion may be cleared up. The sections are then mounted in balsam and labelled.

4. *Dr Woodhead* exhibited the KIDNEYS OF A YOUNG MAN, æt. 23 (a case of Dr G. A. Gibson's), with a somewhat peculiar history. Eighteen months before death the patient consulted Mr Miller for pain on micturition and turbidity of the urine. The urine was analysed by Dr Gibson, who found that it contained pus and blood. Under treatment the patient improved for a time, but his condition was complicated a few months later by stricture of the urethra. For this he was treated by Mr Miller in the Royal Infirmary. He was cured of this, and remained in tolerably good health until about two months ago, when he began to fall off, but it was not until ten days before death that he felt really unwell. He was suddenly attacked by severe vomiting, which persisted in spite of all remedies, and was followed by convulsions and coma. At the time of his death the urine was highly albuminous. Both kidneys were reduced to mere shells bounding large caseous masses. The

left was simply a series of soft pultaceous or soft clay-like masses bounded by an extremely thin wall. The right ureter was somewhat dilated and its walls thickened, but there was no evident tubercular process except in the immediate neighbourhood of the bladder. Left ureter was reduced to a cord, with soft caseous material filling the lumen. The bladder presented a very interesting appearance. In the mucous membrane there were numerous gray miliary tubercular nodules, extending over whole surface, but most numerous at the base. Caseation not at all marked in these minute nodules. In the prostate there was a small cavity about the size of a hazel nut with smooth walls, but with a few strands of muscle projecting. It appeared to be either the urethra dilated for a short distance in the substance of the prostate, or a dilatation of the prostatic utricle, but whether the result of tubercular breaking down or not was doubtful. On section the ejaculatory ducts on each side were found to be lined with yellow caseous material very similar to that seen in ureter. This condition had given rise to so few symptoms during life that its existence had not been suspected until the very last. The lungs were congested, and at the apex of the left there was a stellate cicatrix, firm, fibrous, and deeply pigmented. On section a soft cheesy mass was found embedded in the pigmented cicatrix. Other organs comparatively healthy. It was pointed out as an interesting fact that never during the life of the patient was there any sign of pulmonary disease.

5. *Dr Woodhead* placed before the Society the KIDNEY from a case of Professor Simpson's, a woman, æt. 40, who came into the Infirmary to be operated on for cystic tumour, but who died during an attack of acute bronchitis. The right kidney appears to be replaced by an immense tumour, extending down into the pelvis. It is adherent internally, and on its anterior surface, to the ascending colon. The upper part of this mass is composed of about a third of the kidney. At the lower extremity is an enormous cyst, whilst between there is a large firm tumour mass, which appears to involve the lower two-thirds of the kidney. Length of whole tumour, 14 inches; breadth at widest part of solid tumour, $5\frac{1}{2}$ inches; of cyst, 6 inches; depth of cyst from above downwards, $8\frac{1}{2}$ inches; of solid tumour, $2\frac{1}{2}$ inches; thickness of solid tumour from before backwards, 5 inches; longest portion of normal kidney, 3 inches; greatest width, $2\frac{1}{4}$ inches; thickness, $\frac{3}{4}$ inch. In the centre of the solid portion was a large cavity, formed by softening and breaking down, and into this hæmorrhage had taken place. In the walls of the cyst were numerous projecting nodules, or small tumours, firm, pale or slightly pink, with but few hæmorrhages. In the large tumour there were, in addition to large softened area above mentioned, numerous points of yellow softening and hæmor-

rhage. At the periphery of the solid mass the substance was pale and firm; there were few hæmorrhages. The portion of kidney that is left was pale, but apparently quite healthy. Scattered over the whole peritoneal lining of the abdominal cavity were numerous cancerous masses (for such they appeared to be when examined under the microscope). Similar nodules were also found in the capsule of the liver, in the covering of the left ovary, but not in the ovary itself, in the broad ligament, and in the mesentery and meso-colon, especially close to the intestine, etc. The omentum was so greatly infiltrated that it formed a solid mass, slightly retracted, but more than an inch thick. The whole of the abdominal organs on the right side were firmly matted together. In the right psoas muscle was a large infiltrating cancerous mass. Diaphragm had small cancerous nodules on both peritoneal and pleural surfaces, and there were growths on the pleuræ and in the substance of both lungs. From appearances presented, it would appear that this was a case of primary cancer of the kidney, perhaps developing in connexion with the large cyst, and then spreading very rapidly to the positions mentioned. This seemed more probable than that it started in connexion with the ovary, which was quite uninvolved on both sides, the peritoneum only being affected.

6. *Dr Mackenzie Johnston* showed a FIBRINOUS CAST from a case of fibrinous bronchitis.

7. *Mr A. G. Miller* exhibited—(a.) A FOOT which he had amputated for senile gangrene. There was gangrene of three toes, which had not increased or caused any irritation during five months since the formation of the gangrene. There was no line of demarcation. The foot had been kept wrapped up in sublimated wool sprinkled with iodoform during the five months. The dressing had been changed once a fortnight under the protection of the spray. *Mr Miller* remarked that this case, and others that he had heard of, seemed to prove that the area of ulceration between the dead and living textures, called the "line of demarcation," depended, to a considerable extent at any rate, upon the irritation of the living produced by septic changes in the dead parts.

Mr Cathcart said that in a case of traumatic gangrene of the toes treated by Professor Chiene a line of demarcation had formed. He believed that the parts had also remained aseptic.

Mr Hare, however, stated that although from a clinical point of view the case had seemed aseptic, a microscopical examination of the discharge had demonstrated the presence of bacilli.

8. *Mr Miller* showed (b.) A VERY LARGE CYSTIC TUMOUR removed from the outer side of the knee of a female patient. (c.) The CHART of a patient who had suffered from rupture of the urethra, illustrating the relation of temperature to drainage of the bladder when septic.

9. *Dr James Carmichael* exhibited the LUNG of a child who had died suddenly in the Royal Hospital for Sick Children from hæmorrhage. Immediate death from pulmonary hæmorrhage was sufficiently uncommon in the adult, and still more rare in the child. The patient, a boy aged 5, had been in hospital little over three weeks. Five weeks before he came under treatment pulmonary symptoms had shown themselves. The child, however, had been in somewhat indifferent health ever since he had an attack of measles five months ago. On admission his case did not present any serious or well-marked symptoms other than those of bronchitis. Soon, however, signs of consolidation appeared in the left lung, the physical signs being most marked at the apex posteriorly. Subsequently signs of smaller patches of consolidation in the central portion of the lung and towards the base became apparent. A week before the child's death the breath became fetid. There was no expectoration to aid in diagnosis, which is so often an element of difficulty in judging of such cases in children as compared with adults. The odour was more like that of fetid bronchitis than gangrene of the lung; but owing to the general features of the case, Dr C. had expressed an opinion to the clinical class that there was probably a gangrenous cavity in the lung. On looking at the organ in section three cavities are observed, one at the apex being of considerable size, and containing gangrenous sloughy tissue. Another cavity, ragged and tubercular looking, was also seen in the apex. In the lower lobe, immediately under the septum, was a smaller cavity full of bright arterial blood, into which has opened by ulceration a large branch of the pulmonary artery, the site of the fatal hæmorrhage. The lung tissue, especially in the upper lobe, was of a grayish colour, firm consistence, with some collapsed bits, and evidently in a condition of interstitial pneumonia. There were some tubercular nodules on the pleura. The spleen likewise showed tubercles. The mesenteric glands were enlarged, and some of them caseous. The kidneys also showed commencing tubercular infection. Gangrene of the lung in children was not uncommon, but probably less frequently the result of chronic pneumonia than in the adult, oftener resulting from septic infection through the aspiration of putrid material in diphtheria, or noma, or in fetid bronchitis, complicating pharyngeal or tonsillar necrosis after scarlatina. The fatal termination of the case by hæmorrhage was sufficiently interesting to deserve record.

III. ORIGINAL COMMUNICATION.

Dr Allan Gray read a paper on a CASE OF STRYCHNIA POISONING, WITH AN ANALYSIS OF STEINER'S VERMIN-KILLER, which appears at page 42 of this Journal.

Dr Foulis, Mr Miller, Dr James, and Dr Blair Cunynghame made a few remarks.

Dr Philip remarked the absence from the paper of any reference to the physiological tests for strychnia, and wished to know whether *Dr Gray* was prepared to place implicit confidence in the sulphuric acid and bichromate of potash test. Should the more purely chemical not be supplemented by the physiological tests? A curious case illustrative of this point had occurred some years ago in Verona, in which a verdict of acquittal of the charge of murder was returned, in otherwise strongly suspicious circumstances, on account of the difference of opinion expressed by two eminent specialists as to the nature of the poison employed. Professor Ciotto of Padua, resting on the chemical reactions, maintained that he had obtained strychnia from the remains submitted to him. On the other hand, Professor Selmi of Bologna, while admitting that the colour reaction given by the similarly extracted substance with sulphuric acid and bichromate of potash was striking, concluded against strychnia, on the ground of the negative results afforded by the physiological tests. It might be that the body obtained was one of the series of cadaveric alkaloids, Selmi having described a ptomaine with the strychnia colour reactions. Further, Lombroso and Erba had obtained an alkaloid from decomposing maize with tetanizing properties, whose behaviour in the presence of sulphuric acid and bichromate of potash closely resembled that of strychnia. While, of course, there was little likelihood of error in *Dr Gray's* case, these points at least suggested the important lesson that no analysis in alleged cases of strychnia poisoning could be regarded as complete unless coincident evidence was obtained from both the physiological and the chemical side.

OBSTETRICAL SOCIETY OF EDINBURGH.

SESSION XLVII.—MEETING V.

Wednesday, 10th March 1886.—*Dr HALLIDAY CROOM, President, in the Chair.*

I. *Dr Brewis* showed the UTERINE APPENDAGES which he removed by abdominal section from a patient ten days ago, and made the following remarks:—I regret that the present condition of the appendages gives little idea of their appearance at the time of removal, as great shrinking and loss of colour of the broad ligaments and Fallopian tubes have taken place since then. The Fallopian tubes are tortuous, greatly thickened, and dilated, especially towards their outer ends, and are filled with a white cheesy-looking material. At the time of their removal they had an cedematous, semi-cartilaginous feel. The peritoneum covering the tubes and forming the layers of the broad liga-

ments is quite smooth, there being no sign of adhesive peritonitis ever having been present. The tubes and broad ligaments when removed were in a state of extreme congestion, and were of a purplish colour. On the anterior layer of both broad ligaments several small cysts are to be seen, illustrating the proclivity of broad ligament cysts to appear on the anterior peritoneal layer. None appear on the posterior surface in these specimens. On the right broad ligament none of those cysts can be traced to originate in the converging tubules of the parovarium, but on minute inspection two of them apparently seem to take their origin in the horizontal canal into which the converging tubules run. Microscopically you can distinguish small cysts of the converging tubules of the parovarium from those of the horizontal canal by the former being lined interiorly with ciliated columnar epithelium, the latter with endothelium. On the left broad ligament one or two cysts apparently originate from the converging parovarian tubules. A moniliform distension of the horizontal canal is visible also. The ovaries are distinctly cirrhotic, about normal size, and fissured on the surface by sulci in some places. On making a section of the right ovary a menstrual corpus luteum can be seen occupying about one-fifth of the area of the cut surface; the rest of the surface has a firm fibrous appearance. The patient is twenty-six years old, has been married five years, and had one child three years ago. She came to me first in August last year complaining of constant pain in the right side and in the back—dysmenorrhœa, dyspareunia, and dyschezia. On examining her I found the uterus retroposed, the right ovary somewhat prolapsed and excessively tender, and the right thickened tortuous tube could easily be felt; the left ovary was lying prolapsed in Douglas's pouch, excessively tender to the touch. She was unfitted for her household duties, as the slightest exertion caused great pain in right side and back; she could not assume the erect posture, but either sat or crawled about in a state of emprosthotonus; sexual intercourse had been discontinued for two years, and every time the bowels were moved the act was accompanied with great pain, originating from the prolapsed left ovary in Douglas's pouch. Latterly she told me that when she awoke in the morning her ovaries awoke also. I knew from the first that nothing short of the removal of the ovaries would cure her, but before recommending operation I determined to try every other means of alleviating her distress that I could think of. I kept her in bed for six months, treated her with hot douche, glycerine plugs, blisters, tonics, anodynes, etc., but without doing her a bit of good. Two months ago she begged of me to have her ovaries removed, and I asked the late Dr Angus Macdonald to see her, and to do the operation if he thought it advisable. He thought it most necessary and justifiable, and had he recovered from his illness he intended this to be his first

operation after his recovery. His melancholy death precluded this, and the patient desired me to operate, which I did last Tuesday week, and am glad to say she is making an excellent recovery from the operation, and I hope from her sufferings also. I would like to draw your attention for a moment to her menstrual history in relation to the pathological processes present in the ovaries and tubes. When twelve years of age she had a severe attack of scarlet fever; she menstruated first at thirteen. Her first menstruation was painful, and from then till now each successive menstruation has been so. During the last four years the pain has been inter-menstrual as well as menstrual. In fact, it has been constant. The menstrual discharge in quantity has been most irregular—sometimes excessive, sometimes scanty. Now, I believe that her ovaries became first affected when she had scarlet fever; that at that time they became congested in the same manner as other internal organs become affected in fevers, *e.g.*, the spleen. Following this initial hyperæmia the formation of interstitial fibrous tissue took place, which caused obliteration of the vessels and the Graffian follicles, and established cirrhosis. This cirrhotic change interfered with the circulation, and established stasis in the vessels which lie between the layers of the broad ligament. The stasis accounts for the extreme congestion we met with in the broad ligament, and also for the œdematous thickened state of the tubes; likewise for the presence of the small cysts before mentioned, which I believe to be merely dropsical accumulations in the tubes from which they originate. It is easy to understand that the addition of menstrual hyperæmia to the already distended vessels of the broad ligament may cause one or more of them to rupture, and in this way the cirrhotic ovary may be concerned in the production of pelvic hæmatocele.

II. *Dr James Ritchie* showed a FŒTUS, one of twins born a fortnight before the calculated term. Both hands were clubbed to the radial side, the radius was absent on both sides, and no thumb had been developed. The penis sprung from the perinæum behind the scrotum, which was empty. The urethra was patent for an inch and a half from the meatus, the glans penis uncovered by prepuce. The anus communicated with a rectal *cul de sac* an inch and a half long. On opening the abdomen the sigmoid flexure was seen to be much distended with meconium. It was connected with the rectal *cul de sac* by a fibrous cord; into its lower and anterior aspect was inserted the thickened remains of the urachus. There was no bladder, the ureters terminating at the lower and back part of the sigmoid flexure. *Dr Ritchie* remarked that the entire absence of bones is not of common occurrence. In those cases in which the absence of radius has been recorded the thumb has also been wanting. In 1858 *Mr Erichsen* removed a rudimentary thumb which had been

developed although the radius was absent. In 1881 Mr Shaltock showed two cases having the same deformity of the upper extremities as the fœtus exhibited.

III. *Dr Underhill* exhibited an AGNATHOUS AND HYDROCEPHALIC FŒTUS. This was an instance of the rare abnormality due to defect of the lower jaw. The cranium was large and flaccid, and the bones were widely separated. The eyes were well formed, but the nose ended in a small tubular proboscis without any septum. The lower jaw was entirely wanting, and the mouth was represented by a small orifice, just large enough to admit a probe, and hidden behind a rudimentary upper lip. The ears were large and set low on the head, the lower lobes approaching one another under the rudimentary mouth. This form of monster is rare in the human species, only a very few cases having been described, but it is much more common in the lower animals. The mother was a multipara in the eighth month of pregnancy. The fœtus presented by the breech, and the labour was not difficult. There was an excessive quantity of liquor amnii. *Dr Underhill* proposed to have the specimen carefully dissected, and would lay the result before the Society at a later meeting.

IV. *The President* showed an OVARIAN CYST about the size of a fœtal head, which he had removed ten days previously, the patient making a good recovery. He also showed a FIBROID UTERUS containing a "womb-stone."

V. *The President* read a communication on POST-PARTUM VAGINAL HÆMATOMA, which appeared at page 1001, vol. xxxi., of this Journal.

Professor Simpson said that the Fellows of the Society were greatly indebted to the President for the record of this rare condition. He had only seen three cases, none of which corresponded to those described in the paper. His first case was a lateral one, developing on the left side. He thought the President had explained very well the mode of its production in his own cases.

Dr Ritchie had seen one case coming on in a patient whom he delivered with forceps, owing to the weakness of the expulsive powers.

Dr Hart thanked the President for his interesting and logical paper. It was worthy of note that the swelling began at the top of the vaginal walls. *Dr Somerville* stated in his paper that it began in the broad ligaments.

Dr Underhill said that it was interesting that all of *Dr Croom's* cases occurred in small pelves. He had himself seen only one case; in it the condition did not develop till a week after delivery.

Dr Foulis thought that the uterus and parturient canal should be regarded as one tube, a point which had not received sufficient

consideration in the paper. He had seen only one case of this condition.

Dr Napier thought that the anterior lip of the cervix obstructed the passage of the head. The tear was due to undue stretching of the walls in a lateral direction.

VI. *Dr Hart* read a communication on THE NATURE AND CAUSE OF THE ROTATION OF THE HEAD DURING LABOUR, which appeared at page 1032, vol. xxxi, of this Journal.

Dr Croom thought that a paper offering a satisfactory explanation of the rotation of the head was a great boon, so many theories had been started only to be abandoned—the ischial spines, the planes, the wedge shape of the head, the resilience of the pelvic floor. There was no doubt of the fact that the denominator is lowest and goes forwards; no one had explained why. It might be laid down as a general principle that the lowest part moves forwards. As to the explanation of this, that advanced by *Dr Hart* seemed to him the most satisfactory that had been given, although he was not prepared to pin his faith to it. The only point in the paper which he would criticise was that it assumed that rotation always took place at a definite point, and took no account of cases where it occurred high up.

Professor Simpson held that the wedge shape of the head explained rotation fully. Each side of the child's head might be regarded as a wedge with the apex over the parietal protuberance, a long gradual slope from this point towards the sinciput, and a short steep slope from it towards the occiput. A wedge of this form offers least resistance on the steep side; hence there was less resistance over the occipital end of the head, which therefore rotated forwards. The side of the head which lay in the back of the pelvis had no influence in determining the rotation. When the convergence of the sides of the pelvis necessitated the rotation of the head to allow of the accommodation of its long diameter to the diameter of the outlet, there was no opening in the back of the pelvis to tempt either extremity of the head to move towards it. There was only an opening in the anterior wall under the arch of the pubis, and when we looked at the side of the head lying towards this open space and noted the wedge shape of it, it became evident that the occipital side of the wedge, with its short, steep gradient, must move more readily in the direction of exit than the sincipital side, which was longer and more level. Hence the rotation forward of the occiput, even in cases where at the commencement of labour it looks towards one of the sacro-iliac joints. The rotation in some occipito-posterior cases of the occiput into the hollow of the sacrum was explainable by the globular shape of the head in such cases. In one or two heads that had come through persistently occipito-posterior, the skull remained bullet-shaped after the head-moulding had disappeared. In one

which had lodged some length of time in the canal, the wedge shape of the head had been temporarily undone by the formation of a thick, dense caput succedaneum. The whole surface of the head, not simply the leading part, was compressed by the elastic tissues.

Dr Leith Napier thought that the paper was a valuable one. He thought that the head rotated so as to get out the easiest way; it was simply a case of accommodation.

Dr Haultain thought that the shape of the brim might explain the rotation in occipito-posteriors, the vertebro-bregmatic diameter rotating as it passed the brim would cause the head to rotate.

Dr Underhill thought that he could not eliminate the effect of the bony pelvis as *Dr Hart* had tried to do; contractions at the brim and outlet modify rotation. The cause of rotation at the outlet was evidently the shape of the pelvic arch.

Dr Ritchie remarked that the rotation took place, not after the pain (as we would expect according to *Dr Hart's* explanation), but during the pain. He thought that the head travelled in the direction of least resistance; that the shape of the head, the shape of the pelvis, and its outlet were factors, but the *vis a tergo* and not the resilience of the soft parts was the motive power for rotation as well as for other progress.

Dr Hart, in replying, doubted whether rotation ever occurred above the tip of the coccyx. He thought that Laus' physics and angles were incorrect, and that the *vis a tergo* was not transmitted through the spine.

Part Fourth.

PERISCOPE.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By WILLIAM CRAIG, M.D., F.R.S.E., Lecturer on Materia Medica, Edinburgh School of Medicine, etc., etc.

CARBOLIC ACID IN THE TREATMENT OF BUBO.—Nearly four years ago *Dr Morse-K. Taylor* recommended a treatment of bubo by injection of carbolic acid, which he said in nearly all cases ended in speedy and complete recovery. In the *Med. News*, Jan. 23, 1886, *Dr Philip F. Harvey* reports ten cases which he treated by this method, in all of which a prompt cure resulted. The method employed is as follows:—The skin covering the bubo is first chilled with a spray of ether; the enlargement is then grasped between the thumb and finger of the left hand, held firmly, and the point of a hypodermic syringe thrust obliquely into the centre of the gland to a depth equalling about two-thirds of the narrowest diameter of the

tumour. The syringe being charged with an 8 grain solution of carbolic acid to the ounce of distilled water, 20 to 30 minims are slowly injected. A bag of shot or sand, weighing about 3 pounds, is then placed on the bubo and held in place by tapes, although in favourable cases this may not be necessary. The stage of the disease at which the injection yields the best results is when the gland has attained a sufficient size to admit of the free infiltration of the injected fluid throughout its structure. At such time one thorough injection is usually sufficient to effect a cure, and this without the patient foregoing his usual avocation. When the gland is smaller and harder, it may be necessary to repeat the injection once or oftener. To insure a full measure of success the following details should be borne in mind and carried out:—1. The time of election is just prior to suppuration. 2. Rest, a laxative, and reduced diet assist in the dispersion of the swelling, rest being the most important adjuvant. 3. The exact point at which the injected fluid should be delivered in the bubo is a matter of importance, as also its manner of delivery. These conditions can be satisfied, however, by the exercise of ordinary intelligence and care.—*The Therapeutic Gazette*, March 1886.

SALICYLIC ACID IN GLYCOSURIA.—In the *British Medical Journal* for 1st May, Dr J. Sinclair Holden states that he has used salicylic acid in the treatment of both kinds of glycosuria—that arising from a neurotic disturbance of the function of the liver, and that arising from a neurotic disturbance of the function of muscle, the latter being closely connected with rheumatism. He states that in three cases “in which no rheumatic symptoms existed he failed to make any impression on the polyuria or sugar.” In the cases of glycosuria occurring in rheumatic persons he met with good results from the use of salicylic acid. He says—“The first and most marked effects of the salicylic treatment in the glycosuria of rheumatic persons is the almost complete removal of the distressing polyuria which accompanies it.” He recommends the following mixture, “℞ Salicylic acid ʒij., bicarbonate of soda ʒj., carbonate of ammonia ʒj., mix in water ʒj., and when effervescence has subsided, add water to ʒxij.; an eighth or twelfth part to be taken three times a day.” He concludes by saying, “The early treatment of rheumatic glycosuria with salicylic acid offers a real hope of cure, or, at any rate, it will relieve and prevent that tendency to wasting and exhaustion which has but one issue.”

ATROPINUM SANTONICUM.—Atropinum santonicum, a compound of atropine and santoniac acid, is recommended by Herr Bombelon (*Pharm. Zeitung*, April 14, p. 280) as presenting advantages over any other salt of atropine for ophthalmic purposes, a solution of it being perfectly non-irritating and not liable to fungoid growth. The action is said to be mild and resemble that of hom-atropine. The mydriatic action equals that of atropine sulphate ;

one drop of a solution of 0.01 grain in 20 grains of water is sufficient to dilate the pupil, the dilatation disappearing in from twelve to twenty-four hours. Atropinum santonicum is described as a white amorphous non-hygrosopic powder. A dilute solution may be prepared with cold water, a stronger solution requires the aid of a little heat. It is recommended that the solution be preserved in yellow glass bottles, to avoid the formation of photosantonin acid under the influence of light, though it is not yet known whether this change would be prejudicial.—*The Pharmaceutical Journal*, May 1, 1886.

MENTHOL IN URTICARIA AND PRURITUS.—Among the myriad of remedies for these troublesome affections we have no other which affords such complete and instantaneous relief as a solution of menthol. We have used this remedy for urticaria in three cases. Not only is the itching relieved for the time, but a cure seems to be effected. In pruritus ani, and in eczema, moistening the parts with menthol solution causes an immediate cessation of the pain. The solution should contain from 2 to 10 grains of menthol to the ounce of water.—*The Pharmaceutical Journal*, May 16, 1886.

GRINDELIA ROBUSTA.—Dr Dobroklousky, of St Petersburg, has been engaged in studying the action of the fluid extract of *Grindelia robusta* clinically and physiologically. He reports that he has found it to have a great effect on the heart, causing it to beat more slowly and more regularly, but in this resembling digitalis, being more effectual than the better known drug for this purpose. It has also a more powerful influence on the heart than *Adonis vernalis*, *Convallaria majalis*, or chloral hydrate, and it may with advantage be given in combination with *Adonis vernalis* in obstinate cases of heart disease, where various remedies have been tried without success. With regard to the diuretic effect of *Grindelia robusta*, Dr Dobroklousky finds that it is not very great, being less than that of digitalis or of *Adonis vernalis*.—*Pharmaceutical Journal*, May 1, 1886.

HAMAMELIS VIRGINICA.—The results which we have reached with hamamelis are in accord with those of Dr Hector Guy, of Paris, who came to the conclusion, as the result of numerous experiments, that Hamamelis Virginica is not toxic, that it has no special physiological action on the vascular system, and that it contains no alkaloid. We have shown that there is a very large percentage of tannic or gallic acid in the fluid extract, and the results which have been obtained by some physicians by the use of this fluid extract, in cases of hæmorrhoids and varicose veins, are apparently explained by the presence of the astringent principle. The tannic acid, of course, would not come over in the distillation; therefore the much-used and still more lauded witch-hazel, or the so-called distillates of witch-hazel, must depend for their virtues

upon the alcohol which they contain and the faith which they inspire (Drs John Marshall and H. C. Wood, Philadelphia).—*Therapeutic Gazette*, 15th May 1886.

PERISCOPE OF MEDICINE, CLINICAL AND PATHOLOGICAL.

By G. A. GIBSON, M.D., and WILLIAM RUSSELL, M.D.

VASO-MOTOR NEUROSES.—Starr includes under this title a series of disorders of nutrition and circulation whose causation can be traced to disturbances of the nervous system. Disturbances of the circulation may occur in any part of the body, and are to be regarded not as distinct diseases of the parts in which they occur, but as symptoms of lesions of the peripheral, or sympathetic, or central nervous system. At the present time, however, it is impossible to make a pathological classification of these symptoms, and therefore they may be discussed together. In treating of the subject of vaso-motor neuroses, the discussion of the physiology and pathology of the vaso-motor system can be united with advantage. Since changes in the force and frequency of the heart's action and variations in the total amount of the blood in the body affect the body as a whole, the state of the circulation in any one organ or part depends largely upon the degree of contraction or dilatation of its vessels. This is known as the local vascular tone. It is under the control of the system of nerve ganglia, with their subservient fibres, which are found in the smaller arteries. The energy expended by these ganglia is manifest by a constant contraction of the circular muscular coat of the artery, a contraction which is constantly opposed by the dilating force exercised by the blood-pressure within the vessel. In a state of health an exact equipoise between these forces never occurs. Variations, however, in the vascular tone are produced either by local influence or by influences reaching the ganglia from a distance through the vaso-constrictor or vaso-dilator fibres. The constant manifestation of energy in the maintenance of arterial tone does not have its only source in the local ganglia, but is derived partly from the central nervous system through the vaso-constrictor nerves. From the experiments of Claude Bernard the author concludes that a dilatation of the vessels follows:—1, a paralysis of the local ganglia in their walls; 2, separation of these from the sympathetic ganglia; 3, a destruction of the sympathetic ganglia; 4, a separation of these from the spinal cord by division of the anterior spinal nerve roots; 5, a disintegration of the cord; 6, a separation of these centres from the medulla; 7, the destruction of the medulla oblongata. The action so far considered has been wholly of a vaso-constrictor kind, and the dilatation mentioned has been due to a suspension of constrictor energy,

normally passing outward. This is a passive dilatation, but further experiments have shown that another kind of dilatation may be produced, due to an impulse of an active kind sent to the local ganglia by the vaso-dilators. This is an inhibitory impulse, arresting the constrictor action of the ganglia in the vessel walls in spite of the continued energy sent them from the central nervous system by the constrictors. Here the experiments on vaso-motor dilatation are given, and the various theories of the mechanism of dilatation in the vessel walls, it being concluded that there is no mechanism in the wall which can produce a dilatation, and that a dilatation is due wholly to the blood-pressure within overcoming constrictor action. The subject of vaso-motor reflexes is then taken up, and it is shown that the seat of these reflexes is in the dorsal region of the spinal cord, since all vaso-constrictors and vaso-dilators can be traced to that region. The particular area of the spinal cord governing these reflexes is thought to be the gray matter surrounding the central canal and including the fascicular columns of Clarke. As bearing on this point the author refers to the observations by Jacobovitch, Schultze, and Fürstner. It is impossible to say from these cases whether vaso-motor functions are situated in the column of Clarke, or in the gray matter around the central canal, or in both. Vascular tone of the thoracic and abdominal organs is regulated by centres in the pons and medulla. The experiments of Bernard are related, and cases of diabetes mellitus and diabetes insipidus produced by lesion of the medulla and pons mentioned. The influence of the vaso-motors in producing functional disorders of the stomach and intestines is alluded to. From this review of physiological experiments and pathological facts it becomes evident that the disturbances of vascular tone which are included under the title vaso-motor neuroses may be produced by many different causes acting upon many different organs.—*Boston Medical and Surgical Journal*, 1st April 1886.

CORTICAL HEMIANOPSIA.—Seguin returns to this subject, and supplements the paper, of which we recently gave a short abstract, by another in which he advances his conclusions in the form of propositions. Lateral hemianopsia always indicates an intracranial lesion on the side opposite to the affected part of the field of vision. When it exists along with immobility of the pupil, neuritis, or atrophy of the optic nerve, and especially when associated with symptoms of lesion of the base, it is due to an affection of one of the optic tracts or primary visual centres on one side. The diagnosis of such a condition becomes almost a matter of certainty when Wernicke's "hemianoptic reaction of the pupil" is present. Lateral hemianopsia, with hemianæsthesia, and ataxic or choreiform affections of motion on one side of the body without complete hemiplegia, is probably due to the postero-lateral part of the optic

thalamus, or of the posterior division of the internal capsule. Along with complete hemiplegia and hemianæsthesia, lateral hemianopsia is probably caused by an extended lesion of the internal capsule at the level of the knee and the posterior part. When lateral hemianopsia is accompanied by typical hemiplegia (becoming spasmodic after some weeks), aphasia (if the right side be affected), and little or no hemianæsthesia, it is certainly due to an extensive superficial lesion of the region supplied by the middle cerebral artery. Lateral hemianæsthesia with slight motor weakness of one side of the body, especially if it is associated with any affections of the muscular sense, may probably be caused by a lesion of the inferior parietal lobule and angular gyrus with the subjacent white substance penetrating deeply enough to injure or compress the optic fibres in their course backwards to the visual centre. When lateral hemianopsia is not associated with motor or sensory disturbances, it is due to a lesion of the curvate lobule alone, or of this and the gray substance immediately around it on the internal aspect of the occipital lobe, of the hemisphere opposite to the affected half of the field of vision.—*Archives de Neurologie*, March 1886.

WEATHER AND PNEUMONIA.—From prolonged observations on the character of the weather and the occurrence of pneumonia, Seibert has arrived at certain definite conclusions which he has graphically stated by means of charts. He finds that the causation of pneumonia is much favoured by certain meteorological conditions, and that it is easy in this way to explain the difference in the frequency of this disease from month to month. Low and falling temperature, with high and rising humidity, and high wind, are alone enough to cause this difference. If two of these factors are present together (for instance, much humidity and low temperature without falling temperature and high wind) more cases are found than when they occur singly, and if all the factors are present the frequency of pneumonia becomes very great, and continues so long as the weather remains the same. The same meteorological influence is found over the causation of catarrh of the respiratory mucous membrane, and there is no doubt that chronic catarrh predisposes to pneumonia.—*Berliner klinische Wochenschrift*, 26th April 1886.

NITRO-GLYCERINE AND CHRONIC BRIGHT'S DISEASE.—Following up the recent work of Rossbach, Burzhinski, and Leutovsky, Kinnicutt has studied the effect of nitro-glycerine in chronic renal disease. He has found that it is a powerful agent in lowering the blood-pressure which is often associated with the development of uræmia, and that it controls or relieves many of the paroxysmal disturbances of the nervous system included under the term uræmia, especially headache and asthma. He has also observed that it apparently increases the quantity of urine and diminishes the loss of albumen. He is of opinion that in the systematic and prolonged

use of nitro-glycerine in chronic nephritis we possess a means of maintaining more or less continuously a lowered blood-pressure, of averting or relieving critical conditions, and thereby prolonging life.—*The Medical Record* (New York) 17th April 1886.

OCCASIONAL PERISCOPE OF DERMATOLOGY.

By W. ALLAN JAMIESON, M.D., F.R.C.P., Extra Physician for Diseases of the Skin, Edinburgh Royal Infirmary; Lecturer on Diseases of the Skin, Edinburgh School of Medicine.

TOPICAL APPLICATIONS IN SKIN DISEASES.—Dr Brooke of Manchester mentions that salicylic acid when applied externally can pass through the cuticle in sufficient quantity to relieve the pains of rheumatism and allow of its easy detection in the urine. General inunctions with styrax not infrequently induce albuminuria. He has had medicaments made up with a very stiff basis, composed of varying proportions of wax, cocoa butter, and oil, and cast into the form of a stick of "cosmetic." This when rubbed on to the skin is sufficiently soft to leave a complete coating of salve, and hard enough not to run. On the face the layer is scarcely noticeable, and can be renewed several times a day by the patient. On the body, the advantages of Unna's plasters may be secured by placing over the anointed spots a piece of Mather's "Surgeons' Adhesive Rubber Plaster," or of Beiersdorf's aluminium sticking plaster with guttapercha back. These adhere without the application of heat, and prevent effectually the permeation of the drugs. The patch of plaster should be made sufficiently large to overlap the ointment by half an inch, so as to obtain a direct hold for the plaster. Messrs T. Gibbons, 41 Market Street, Manchester, make these medicated salve sticks. The most important are—Chrysorobin 5 per cent. or 10 per cent., acid pyrogalllic 10 per cent., acid salicylic 10 per cent., emp. plumbi 25 per cent., B. naphtol 10 per cent., etc. Various diseases for which these remedies are suitable can thus be easily treated. Another basis of great use in cases of more extensive disease is formed of a mixture of equal parts of almond oil and thick gum water. A creamy emulsion is produced which, when well rubbed into the skin, soon dries and leaves an almost invisible coating. A 15 per cent. to 20 per cent. solution of salicylic acid in this oil-gum is very effectual as a treatment for slight cases of chronic eczema, where no very vigorous measures are called for, but where the thickened skin is a provocation to constant scratching and slight local relapses. It is also a useful auxiliary in lupus, in slight and superficial cases, or in more extensive ones when operated on piecemeal. This oil-gum, mixed with 10 per cent. of pyrogalllic acid, was applied twice daily in a case of obstinate psoriasis, rubbed well into the skin, and covered over with thin paper, to prevent staining, with much success. When

gum is added to the glycero-gelatine of Unna and Beiersdorf it can be poured out when hot, and dries into thin films. These, when moistened and applied to the skin in sheets, adhere well and remain flexible, and may prove useful.—*Manchester Medical Chronicle*, Oct. 1885.

LANOLIN.—O. Lassar has employed lanolin in 400 cases without any injurious effects. Among other diseases in which he has used it are pityriasis versicolor, in which three inunctions with an ointment of salicylic acid 2·0, precipitated sulphur 10·0, lanolin 88·0, were sufficient to cure. In inveterate cases of scabies, of tylosis, and acne, the following modification of Williamson's ointment has been more efficacious than the old. $\mathcal{R}$ B. naphtol 5-10, saponis mollis, cretæ preparatæ, sulphuris precipitatæ, lanolin, $\mathfrak{a}\mathfrak{a}$ 25·0. In tinea tonsurans barbæ a 5 to 10 per cent. resorcin lanolin salve has been serviceable, even in the inflammatory stage. Lassar's own well-known paste can be modified as follows:— $\mathcal{R}$ Acid salicylic, 2·0; vaselini, lanolini, zinci, oxidi, amyli, ana, 25·0. Misce leniter terenda fiat pasta. In psoriasis a 25 per cent. chrysarobin lanolin ointment served to remove the disease in a well-marked case in ten applications. Lassar believes that failures to attain a lasting cure in psoriasis are due to our stopping short of a thorough removal of all traces of the complaint. Patients and physicians are alike satisfied when the most obvious and largest spots are removed, and the almost microscopic initial lesions do not enlarge. Lassar believes in the communicability of psoriasis, and that a complete cure can only be effected by a radical destruction of the last traces of the eruption. Since the chief seat of the disease is not to be regarded as epi- but en-dermic, so an endermatic treatment, as with lanolin, is indicated. Even after apparent cure he recommends a rather elaborate treatment with baths of corrosive sublimate and tar, and inunction with chrysarobin lanolin salve for some months, at intervals, to obviate the relapses, which are nothing else than the persistence of the first outbreak. To prevent conjunctivitis from the chrysarobin he advises wire gauze preserves, secured by an elastic band, to be worn all night. In seborrhœa lanolin lessens the branny desquamation, and alone is preferable to carbolic or sulphur pomades. In rough states of the skin a lanolin salve composed of equal parts of vaseline and lanolin, with the addition of a little tincture of benzoin, is useful. A mercurial ointment can be more easily prepared with lanolin than with lard, the particles of mercury being much more finely divided.—*Berliner Klinische Wochenschrift*, 1st Feby. 1886.

XERODERMA PIGMENTOSUM.—White contributes an account of two new cases of this curious disease. The parents were Russian Polish Jews, and healthy. Two boys of a family of seven were affected. The eldest was seventeen, and the affection began in him when two years old, in Poland. It commenced as freckles on the

face and hands, and the pigmentation increased till it is now impossible to determine with certainty the natural colour of the skin, so universally has it become implicated. The tint of the body is as dark as that of a very dark Spaniard. Besides the melanosis there is leucoderma or atrophy of this pigmentation and the production of telangiectasis. The dates of the appearances of these phenomena are unknown, as the lad was separated from his parents for nine years, during which time they began. In the other case the boy is three years old, and there are no leucodermic spots nor telangiectasis, only pigmentation. In neither as yet is there the almost constant final transformation into carcinoma.—*Journal of Cutaneous and Venereal Diseases*, December 1885.

VARIETIES OF HERPES ZOSTER.—Weiss concludes an exhaustive paper by the following classification. He divides zoster into three main groups. 1. Toxic; 2. Neurotic; 3. Trophoneurotic. 1. As toxic zoster are to be understood those cases which are induced by certain substances derived from without, which circulate in the blood. According to the chemical or infectious nature of these, the group can be subdivided into two classes: the toxic properly so called, and the infectious. To the first belong those which occur after the use of arsenic, as in the inhalation of carbonic oxide gas, etc. To the second may be referred cases of epidemic herpes, of zoster associated with cerebro-spinal meningitis, of puerperal or pyæmic zoster; also cases of febrile herpes, in croupous pneumonia, intermittent and recurrent fever, and exanthematic typhus. The search for microbes in this variety of zoster, which has so far not been made, would, the author thinks, give positive results. The clinical features of the toxic and infectious form will be regulated by the original disease. But apart from this both exhibit many characteristic peculiarities. The eruption of vesicles is seldom confined to the course of certain nerves, and frequently extends from one side to the other. The preliminary neuralgia and hyperæsthesia of the affected parts is wanting, nor do subsequent neuralgia and anæsthesia succeed the drying up of the vesicles. These points speak for a peculiar pathogenesis, and are with difficulty reconciled with Dubler's hypothesis, that the cutaneous inflammation extends from the nerves. This view cannot be maintained even on anatomical grounds. 2. Neurotic zoster embraces those cases which are observed as concomitants of a primary or descending neuritis, or more properly perineuritis, as a result of injuries, of chill, in adhesive pleurisy, caries of the vertebræ, periostitis of the ribs, etc. In zoster of this variety the inflammation advances along the nerves to their termination in the skin, and there involves its tissues and sets up inflammation. In correspondence with this view is the prominence with which premonitory pain

in the nerves occurs, or the alternative sensations of burning, itching, or sensitiveness to cold, and the subsequent hyperæsthesia and neuralgia. The neuritic zoster presents the feature of limitation to the course and area of distribution of particular nerves, to which the unilateral arrangement and the peculiar localization of the eruption agrees. As a form combining both groups we have examples in infectious neuritis and malarial neuralgia. 3. Those cases must be regarded as the expression of a trophoneurosis, which, after the positive exclusion of a peripheral affection of the nerves, primary or progressive, can only be referred to a disorder of the central nervous system. The origin of the cutaneous inflammation is difficult to explain in such cases, indeed nearly impossible, according to the prevalent conception of the inflammatory process. Neisser and Weigert consider the eruption of vesicles as the indirect result of the trophic disturbance.—*Prager Zeitschrift für Heilkunde*, December 1885.

SURGICAL PERISCOPE.

By A. G. MILLER, F.R.C.S.E.

PASTEUR'S TREATMENT OF HYDROPHOBIA.—The medical journals are diligent in supplying the hungry public, lay and medical, with the details of M. Pasteur's performances. Having read many of these, we have become impressed with the importance of the three following points:—1. The system of treatment is so elaborate, that it requires a special laboratory, numerous assistants, and a period of several months (at least) before it can be commenced on the human sufferer. 2. Virulent spinal cords, taken from rabid animals, if exposed to the air, or insufficiently protected from bacterial influence by antiseptic precautions, quickly lose their power of inoculating. 3. Patients from every part of the world cannot go to Paris to be treated, and M. Pasteur says that they cannot be treated by his method anywhere but at his own Institution. The questions which naturally suggest themselves, therefore, are these—Is there no way of simplifying M. Pasteur's method? Is there anything which has been evolved in the course of his experiments which holds out a prospect of prophylactic treatment on ordinary surgical principles, applicable to all circumstances and situations? To the first of these M. Pasteur says "No." This answer makes the second question of very vital importance to the whole world. We think that some indication of an answer may be gathered from the second point mentioned above. If exposure to the air destroys, and antiseptic surroundings preserve the virulence of the morbid cause, then free incision of the bites of animals (which are often punctured wounds), cauterization, and exposure to the air, to encourage inflammation and suppuration, seem to be indicated.

LYMPHATIC INFILTRATION OF THE SKIN IN CARCINOMA OF THE BREAST.—Mr Poland, F.R.C.S., says that the brawny condition, sometimes called the cancerous cuirass, is due to an extensive infiltration of cancer cells, "not only in the network of the lymphatics of the skin, but also in the subcutaneous lymphatics." This will compel the surgeon, if he operate at all, "to remove the skin very widely indeed, together with the pectoral muscle, and to clean out the axilla as thoroughly as possible, even though the glands be not felt by means of the fingers before operation." Mr Poland records three cases of the above condition, which terminated fatally a few weeks after operation, even though in two the axillary glands were removed.—*Lancet*, August 1885.

TREATMENT OF COMPOUND FRACTURE BY WIRING THE FRAGMENTS.—Dr J. Williston Wright, of New York, records in the *New York Medical Journal* for 31st October 1885 eight cases thus treated. He recommends the procedure for the following reasons:—
1. Performed antiseptically, it affords facility for making the wound clean. 2. It facilitates reduction of fragments and their retention in position. 3. It diminishes mobility and consequent irritation during dressing of the wound.

TREATMENT OF FRACTURE OF THE CLAVICLE IN CHILDREN.—Dr Samuel W. Smith, of New York, writing in the *Medical Record* of 19th December 1885, recommends the following method, viz., to fasten a bandage or handkerchief round the forearm, on the affected side, just below the elbow, bend the elbow, then draw the elbow well back, and secure it in that position by fastening the bandage or handkerchief round the opposite shoulder. The same result might be obtained by a strip of adhesive plaster.

THE CONTROL OF BLEEDING DURING EXCISION OF THE TONGUE.—Mr Jordan Lloyd, F.R.C.S., Birmingham, proposes to prevent bleeding as follows:—Take a stout, long, well-curved needle in handle, threaded with medium-sized whipcord, and enter it from the front of the neck in the middle line immediately above the hyoid bone; feel for the point of the needle with the left finger as the instrument is pushed through the root of the tongue. In this way the epiglottis is protected from injury, and nothing more than the lingual tissues are transfixed. Hook up the loop of thread with the left finger, and pull it well through and out of the mouth. Withdraw the needle, liberate the thread from it, and cut through the loop. Now enter the empty needle at the same point of puncture, through the skin only, and pass it subcutaneously—say to the right—until its point is opposite the upper border of the root of the great cornu. (This step is facilitated by pinching up the skin and pulling it outwards away from the needle.) Care must be taken that the needle runs immediately beneath the skin, so as to be outside and well away from the lingual artery. Now

turn the point inwards above the great cornu, so as to enter the bottom of the side of the pouch, the finger having again been introduced to receive the point of the instrument. Thread one of the ends of the cord which is in the mouth through the needle and withdraw. A loop will in this way have been made around the root of the right half of the tongue; its two ends emerging from the median puncture are to be tied tightly enough to control circulation (best ascertained by feeling for the pulsation of the lingual vessel on the under surface of the tongue). A similar proceeding is to be carried out on the left side, and thus the whole tongue will be secured in two separate halves. There is no real difficulty in the operation.—*The Lancet*, 23rd January 1886.

OSTEOTOMY WITH THE CHAIN SAW FOR TALIPES.—Mr Horatio P. Symonds, of Oxford, writing in the *Lancet* for 2nd January 1886, says:—It occurred to me that if we were to divide the bones in the same manner in which we divide the tendons a far better result might be obtained; better because quicker, since many cases fail on account of the patient's lack of confidence through seeing improvement taking place so slowly. I may state that I have performed the wedge-shaped removal and pegging, as advised by Dove and Ogston, but did not find the result sufficiently satisfactory. The operation I perform in all severe cases of talipes is to pass a chain saw round the tarsus, in front of the astragalus. Taking the tarsus as a triangle, pass a metal-handled tenotomy knife through the sole of the foot in front of the os calcis, commencing from the inner side. Then let the chain follow the knife through the sole, and repeat the proceeding from the outside to the dorsum of the foot. Complete the skin incision and then cross the chain so that it can gradually work its way outwards. The inner wound is sewn up, no drainage being necessary. The foot is then fixed on to a Volkmann's splint for a fortnight, at the end of which time, after manipulating it into a good position, it is fixed in plaster-of-Paris for three months. I recently saw a case in which I had performed this operation eight months previously, and the patient was then walking without apparatus of any kind, and the foot, which before the operation had been very markedly deformed, was restored to its normal position. I need hardly say that the operation must be done with strict Listerian antiseptics, particular attention being paid to the condition of the saw.

TREATMENT OF GUNSHOT WOUNDS.—The *Medical Record* for 12th September 1885 has a most interesting and well written paper on the above subject by Dr Henry T. Raymond, A.M., Assistant-Surgeon, U.S.A. He commences by saying,—“There seems to be an impression almost universally prevalent among the laity, and widely so among the medical profession, that a gunshot

wound calls loudly for some one or all to do something." He then points out the immense risk of surgeons being "overmeasurably busy," and advocates (antiseptic treatment being always employed as strictly as possible); 1. Immediate occlusion under scab, crust, etc., without instrumentation; 2. When a short interval has elapsed after the injury, antiseptic cleansing (without probing), and dressing with dry antiseptic material; 3. Antiseptic disinfection and drainage when the former are inapplicable; 4. Resections and amputations; and 5. Secondary incisions, etc., with drainage. Dr Raymond discusses at some length the advantages and methods of employing antiseptics in the field. The weight of authority he says is in favour of early antiseptics, and as little interference with wounds, by hands or instruments, as possible. He says that the antiseptic used by the American Indians is "mother earth."

MAGGOTS IN THE HEAD.—Dr C. M. Harrison, of Del Rio, Texas, writes that the presence of worms in the cavities of the head, reports of two cases of which he had seen some time ago in *The Medical Record*, is by no means a very uncommon phenomenon in that country. There are two species of flies which attack diseased parts, viz., the blue-bottle (*Musca vomitoria*), and the flesh-fly (*Sarcophaga carnaria*, Meg). The blue-bottle deposits eggs, which are hatched in two or three hours, provided they are kept moist and warm; and the flesh-fly deposits living larvæ, which commence to burrow at once. It was of the latter kind Linnæus said that the larvæ of three females would devour the carcass of a horse as quickly as would a lion. These are popularly known as "screw-worms," and they increase in size with amazing rapidity. The flies deposit their eggs or larvæ in decomposing substances, and it is probably, the writer says, because there is so little decaying animal matter in his country, owing to the dry air, that the flies so often attack diseased tissues in the living subject. Dr Harrison writes: "The first person I ever treated for larvæ in the nose was a Mexican, a shepherd, about forty years of age, who had nasal catarrh. I visited him one morning and found him apparently unconcerned, partly because he was suffering but little pain at the time, and partly, also, because he had cured and seen cured so many cases of screw-worms in sheep. I immediately injected into the nares a solution of carbolic acid in glycerine and water, syringing the cavity well, and bringing away eight or ten wriggling maggots. I then hoped I had reached them all, but was disappointed, on returning a few hours later, to find my patient suffering considerable pain, with a bloody serum running from his nose. I then changed solutions, resorting to corrosive sublimate, turpentine, tannin, and morphine, using each in turn, but always finding that I had failed to dislodge all the worms. I used first one solution and then another, through the anterior and then the posterior nares, but despite all my efforts the patient died in

agony at the end of three days. His features were unrecognisable. The eyes were swollen and red, and the face was puffed out to a level with the nose, while from the nares a bloody serum was constantly flowing. About two months later I was called to see another case in the same house. The patient was a Mexican woman, forty-two years of age. This time, after failing to accomplish much with my injections, I secured consultation, but only succeeded in obtaining companions in my misery. Finally, at the end of the second day, we became desperate and resolved to see what could be accomplished by cutting into the nasal cavities. We found it necessary to keep the woman in nearly a sitting position, in order to prevent the serum, which was constantly oozing, from running down the throat. The woman had hardly begun to inhale the chloroform when down tumbled a stupefied maggot, fully half an inch long. We thus succeeded in grasping a number with the forceps, and the patient, not yet being fully anæsthetized, felt them coming down through the posterior nares, and as she did so would hawk and roll them forward with her tongue and spit them out. By putting a cork between the molars and using a tongue-depressor we were able, after she became unconscious, to reach into the throat and seize the stupefied worms as they came down. In this way we removed sixty-seven worms. I then used antiseptic and soothing injections, and hoped the trouble was at an end. But my disappointment was great, on returning the next day, to find the patient with both eyes closed by the swelling, picking away an occasional live worm, and suffering severe pain. Becoming desperate, I mixed a half-ounce of pure chloroform with an equal amount of the antiseptic solution, and threw the whole with considerable force into the anterior nares. The woman gave a groan and fell over as though dead, and I waited with some anxiety to learn whether I had killed my patient or the worms. But the woman recovered, and from that time no more live worms were seen. But dead ones innumerable came away in knots of from three to ten for three days, each time that I syringed out the cavity. The woman is alive, but her nose is completely hollowed out and sunken in at the sides, for the septum and turbinated bones have disappeared. Since that time I have always treated the cases in this way, using chloroform first to kill the maggots." Dr Harrison relates another case of maggots impacted in the external auditory canal. There was so much swelling about the entrance that no injections could be used, but by blowing in the fumes of chloroform the worms were killed. Soothing applications were made until the swelling was reduced, and the dead maggots were then syringed away. [In the case of the woman who recovered with loss of the septum and turbinated bones, we would venture the suggestion that this was the result of pre-existing syphilitic disease. The fetor of syphilitic necrosis would be likely to attract the flies, who would deposit their eggs or larvæ in the nostrils, and the maggots might then complete the

destruction of the soft parts. But it is hardly to be supposed that worms could in so short a time eat away and completely destroy the bone tissue.—Ed.]—*The Medical Record*, 10th October 1885.

PERISCOPE OF SYPHILOLOGY.

By FRANCIS CADELL, F.R.C.S. Ed.

SOME MOOT POINTS IN THE NATURAL HISTORY OF SYPHILIS.—This subject was discussed by Mr Jonathan Hutchinson in the Lettsomian Lectures, of which the following is a brief abstract:—

Mutual Relations of the different Forms of Primary Venereal Sores.—No one thinks that there are two forms of syphilis, and no one doubts that there are two kinds of sores. Are they related or independent? That is all we dispute about. The fact that favours the creed of those who think that they are independent is, that the secretion of the chancroid is very contagious, and always produces a sore like itself. This was proved by Bassereau by confrontation. Since then syphilization has abundantly proved his point. It must be remembered, however, that it was done almost exclusively on those who had had syphilis. Here was a fallacy, for the patient might, in consequence of his prior syphilis, be insusceptible of fresh contagion. But the practice was tried by Danielsen on a number of lepers who had never had syphilis, with similar results. It might seem that the proof of specific distinctness was here given. It is necessary, however, at this stage to insist that there is an important difference between a specific contagion and a specialized contagion. All inflammatory products are probably, under favourable conditions, contagious, as gonorrhœa, erysipelas, and diphtheria, and so on. It is possible, then, that the poison which produces the chancroid is after all only a specialized product of inflammation, and not a specific virus. Many facts seem to support the conclusion just hinted at, and to imply that soft sores are after all an appanage of syphilis. In practice we encounter a great variety of conditions and great differences in course, in the "soft" group of venereal sores, and are obliged to conclude that they agree in one feature only—the absence of hardness. The rounded form, punched out and ragged edges, and gray base, are conditions not present in Mr Hutchinson's experience in one of five of the venereal sores which do not harden. This want of uniformity in conditions is a strong argument against specificity. Another equally strong argument is that the true chancroid on the genitals is seldom seen, excepting in those who have had syphilis already. In using this argument, he by no means wishes to deny that the typical chancroid is sometimes seen in those who have never had syphilis. Mr Hutchinson thinks all *a priori* probability favours the suggestion that non-

indurated sores are produced by the secretion of true chancres, which have been changed in character either by the inflammatory process, or by the non-susceptibility of the tissues of the recipient.

Phagedæna.—All will admit that syphilitic inflammations have a remarkable tendency to become phagedænic. This may occur in all stages of syphilis, and to all kinds of sores.

Hospital Phagedæna.—Epidemics of this form he believes to originate from cases of syphilitic phagedæna. A knowledge of the fact that phagedæna usually goes with true syphilis is of much importance for purposes of retrospective diagnosis. Whilst some have assumed that scars on the penis, or its extensive malformation by bygone phagedæna, imply the probability of syphilis, others have asserted that they rather favour the belief that the disease was not true syphilis. His vote would go with those who regard them as important, though not conclusive, evidence of constitutional disease. He also regards scars in the groin as presumptive evidence of syphilis.

Second Attacks.—In 1839 Ricord said that a person who had once had syphilis was not liable to it again. Up to 1858 he had met with no exceptions that satisfied his mind. In the following year occurred the first case in which he himself witnessed and treated two attacks of undoubted constitutional syphilis in the same patient. It is, Mr Hutchinson thinks, generally accepted, that second attacks after considerable intervals are not very uncommon; but, at the same time, that Ricord's law holds good in reference to a very large majority.

Incubation-Periods.—Opinions vary greatly on this point. If by incubation-periods we mean, as he contends we ought to do, the interval between contagion and the production of an induration which can be diagnosed, then Mr Hutchinson believes we shall seldom find it less than five weeks, and more often six. If we date to the first appearance of a sore, then it will be a week or ten days shorter, for the development of hardness takes that time. In the case of a medical man who vaccinated himself in the forearm from a syphilitic infant, the punctures, which had quite healed, became irritable on the twenty-first day, and were well characterized chancres on the forty-first. In another series of vaccination-syphilis, eleven patients received the virus on the same day. In all the punctures, or vaccine-vesicles, healed; and in all they became irritable at the end of the fifth week, and were well indurated at the end of the eighth.

Recurrent Chancres of False Indurations.—They occur to those who have had syphilis, and usually on the site of former chancres. They occur usually within five years after syphilis. They develop in the retro-coronal fold of the prepuce, and are often wholly without ulceration. They do not resemble tertiary gummata. They are rarely attended by an enlargement of glands, and never followed by constitutional disease.

On Indurations as a Symptom, and on Syphilis without Chancre.—In many cases it lasts only a very short time, and is only very doubtfully marked; in others it may, in size and duration, simulate a new growth. In women it is often very ill marked, and its characters vary much in relation to the special tissue affected. In some cases no initial lesion can be discovered. These cases divide themselves into two groups—those in which an attack of gonorrhœa preceded the constitutional symptoms of syphilis, and those in which no local disease of any kind was observed. Respecting the last it is undoubtedly possible—indeed, in most instances, probably true—that a chancre had been present and had escaped recognition.

Gonorrhœa - Syphilis.—The frequent occurrence of cases in which syphilis follows what was considered to be only gonorrhœa suggests the suitability of recognising what we might call gonorrhœa-syphilis. Mr Hutchinson quotes cases from several authorities in confirmation of this.

Syphilis conveyed in Vaccination with clear Lymph.—A gentleman in our profession vaccinated his own arm repeatedly, and in many places, from syphilitic infants, being very careful on every occasion to use only clear lymph. On the first two occasions he failed, but on the third he succeeded, and three indurated chancres were the result, followed in due course by constitutional symptoms. Had that repetition not taken place, and had a report of results been given to the world after the first two trials, how strong would have been the conviction of all in the truth of the creed, that pure lymph, even from infected vaccinifers, is safe! The interest of this demonstration does not end with its relations to the practice of vaccination. It proves that the virus of syphilis may exist in a perfectly clear fluid, and in company with that of another specific fever. We know from experiments that if the purulent secretion of soft sores be filtered so as to get rid of pus-cells, it is no longer inoculable. The converse is probably true of the virus of syphilis. The contagion of the one is pus, that of the other the particulate micro-parasites of a specific fever.

(To be continued.)

Part Fifth.

MEDICAL NEWS.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.—The following gentlemen passed their final examination for the degree in Medicine at the sittings held on 3rd June 1886, and were admitted L.R.C.P. Ed. :—Thomas Henry Moyles, Maryborough; Samuel Shannon Parkinson, Killough, Co. Down.

SIR DOUGLAS MACLAGAN, M.D., ETC.—Every reader of this Journal, and, indeed, every Scotsman all over the world, will be delighted to hear that our veteran physician, teacher, toxicologist, volunteer, bard, and archer has, in his individual capacity, received the well-won honour of knighthood. Few men in this degenerate age so well come up to the chivalrous standard associated with the ancient honour, and by no one could it be more honourably borne.

MR D. H. MENZIES, of Glasgow, is continuing to add to his excellent series of portraits of distinguished members of the profession. A speaking likeness of the late Professor Sanders will be welcomed by many of his pupils and friends who loved the man as well as respected the physician. Professor Gairdner of Glasgow, Sir Spencer Wells, Drs Wilks and Clifford Allbutt will be appreciated by both patients and pupils, while the jovial countenance of the modest and genial Rutherford, of Edinburgh, will doubtless command a large sale to adorn the laboratories of the physiological experimenters of those happier climes where anti-vivisectionists have not yet begun to trouble.

THE examinations for the Certificate in Psychological Medicine, given by the Medico-Psychological Association, will be held at the Royal Edinburgh Asylum on the 29th July next. Candidates wishing to present themselves must give notice fourteen days before the examination to Dr Rutherford, Crichton Institution, Dumfries.

A CHICAGO paper tells the following of Dr J. Adams Allen. When he was commencing practice on a winter's day all muffled, he was riding in a street car, when he overheard two persons talking about him. One asked the other what sort of a doctor was this Allen? "All I know of him is that he snatched my aunt from the grave last summer." "Did he, indeed?" said the other; "well then he must be a pretty good doctor. What was the matter with your aunt?" "Oh, she was dead and buried, you know."

OBITUARY.

DR WILLIAM FINLAY OF TRINITY.

It falls to the lot of some happy men in our profession to become in time the uncrowned kings and beneficent despots of their own district. Skill gains confidence, high moral character commands respect, and tenderness of heart and manner win love, so the throne is reached, and the name is in the hearts of all associated with the place—and thus an immortality of the best kind, if limited in area, is fairly won. Such a man was the late Dr William Finlay of Trinity and Newhaven, and such a happy

lot he has enjoyed for five and forty years, till he crowned it with a fair death on the 8th of June 1886.

Born at his father's farm of Hill Ha', Eaglesham, Renfrewshire, on May 13th, 1814, he was apprenticed, when still quite a youth, to Dr Thomas Latta of Leith, and while still with him he attended his medical classes in the Edinburgh Infirmary. Soon after Dr Latta died, and Finlay went to Davis Strait, as surgeon to the whaler "Caledonia." On his return from Davis Strait he went to London as assistant to Mr Liddle, surgeon, and there remained four years. He then returned to Leith, and was assistant to Dr Cheyne for about two years, after which, in 1841, he commenced practice for himself in the Newhaven district, and there he remained respected and beloved by all till his death. He took the M.D. St Andrews in 1845, and became F.R.C.P. Ed. in 1858.

Though in his early years he had many a struggle from the *res angusta domi*, yet with the pertinacity and industry of a true Scotchman he overcame them nobly, and probably spent as happy, useful, and honourable a life as could be wished for by any one. Happy specially in his family; his boys were noted at school and college, not only for their talents, but for their hardihood and manliness, excelling in all schoolboy sports as well as at their lessons, and the old man was justly proud of them, not only of the doctor who succeeds him and keeps up the name of Finlay of Trinity, but also of the eldest, who forsook medicine for the English bar, and has lately proved himself to be a statesman as well as an orator.

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F. J. B. Quinlan, M.D., L.R.C.S.I., F.K.Q.C.P., M.R.I.A.,
etc., etc., *Professor of Materia Medica and Therapeutics, Catholic University Medical College; and Examiner in Materia Medica and Therapeutics, Royal University, writes in the "Medical Press," July 15th, 1885.*

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Part First.

ORIGINAL COMMUNICATIONS.

I.—CLINICAL AND PATHOLOGICAL MEMORANDA.

By BYROM BRAMWELL, M.D., F.R.C.P. (Edin.), Assistant Physician to the Edinburgh Royal Infirmary; Lecturer on the Principles and Practice of Medicine, and on Practical Medicine and Medical Diagnosis in the Extra-Academical School of Medicine, Edinburgh; Additional Examiner in Clinical Medicine in the University of Edinburgh, etc.

IV.—*Case of Aneurism of the Right Internal Carotid Artery. Rupture; Convulsion; Violent Delirium, followed by Pain in the Back of the Head, Stiffness of the Neck, and Retraction of the Head. Second Rupture a fortnight after the first Attack; Convulsions; Delirium; Coma; Rapid Rise of Temperature; Death.*

J. W., æt. 50, a widow and washerwoman, who for three months had been acting as a nurse in the Sick Children's Hospital, was admitted to the Edinburgh Royal Infirmary on October 12, 1884, under the care of Dr Affleck, to whose kindness I am indebted for the following notes of the life history of the case:—

Eleven years before the present illness the patient vomited a considerable quantity of blood, but, with this exception, had always enjoyed good health.

At 11 P.M. on October 11, 1884, she was suddenly seized with an epileptiform convulsion, and remained in a quiet, unconscious state for some time; she then gradually became violently delirious, tossing her body about, grasping her head with her hands, and crying out loudly.

She was admitted in a state of violent excitement to Ward 6, Royal Infirmary, three hours after the onset of the attack (at 2 A.M., October 12), and remained in the same excited condition until 10 A.M., when she became somewhat quieter,—but she did not regain consciousness until the following morning (some thirty-six hours after the onset). She remembered nothing that had occurred from before the onset of the convulsion until the morning of October 13. When she came to herself she complained of a violent pain in the back of the head; the neck felt stiff, and the head was retracted. Ice was applied to the head,

tincture of belladonna to the back of the neck, and twenty grains of bromide of sodium was administered internally three times daily. Under this treatment she improved for four days, when the headache returned; blisters were applied to each temple, and the pain soon subsided. She continued to improve, and on the 24th felt much better than she had done since the commencement of the attack, and was able to sit up.

On October 25, at 2 A.M., she was again seized with a convulsion. Between 2 and 5 A.M. she had four separate convulsions; between the fits she was violently excited. After the last fit, she became comatose, and remained unconscious until 6.30 P.M. on October 26, when death took place. There was a marked rise of temperature during this second attack (see Fig. 10.) At 5 P.M. (an hour and a half before death), the temperature in the axilla was 107° F.; half an hour after death it was 106° F.

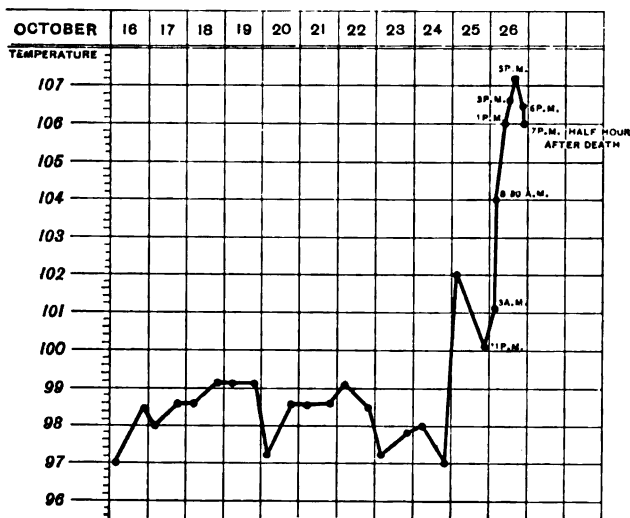


FIG. 10.—Temperature Chart in the case of J. W. Aneurism of the internal carotid artery and meningeal hemorrhage.

At the post-mortem examination, which was made on October 28, the body was found to be well nourished, but pale; the pupils equal and dilated; rigidity strong; lividity slight; a recent (commencing) bed-sore was present on the right side of the sacrum.

Head.—The scalp, skull cap, and dura were natural. The convolutions were considerably flattened, and there were some patches of fluid blood on the convexity of each hemisphere under the arachnoid. The superior longitudinal sinus contained some fluid blood and a small clot.

On removing the brain a large quantity of blood was found at

the base. It had evidently been extravasated at two distinct dates. In front of the pons there was a large mass of recent blood, partly fluid but chiefly clotted, which extended into the Sylvian and other fissures. Beneath this recent extravasation, over the under surface of the pons, around the chiasma, and in the anterior longitudinal fissure between the frontal lobes, there was a thick layer of tough, chocolate-coloured blood, which was firmly adherent to the membranes, and had evidently been extravasated at the time of the first seizure.

On carefully removing the clots from the vessels at the base of the brain, an aneurism, which is represented in Fig. 11, was found springing from the left internal carotid artery at its point of termination.

A minute, pin-point opening was present in the wall of the sac. A laminated, partly decolorized blood-clot surrounded the aneurism, and was firmly adherent to the outer surface of the sac. The aneurism was in contact with, and must apparently have exercised considerable pressure upon the left side of the chiasma.

The brain weighed 3 lbs. 5 oz.; it was markedly anæmic, but otherwise healthy. A small quantity of fluid blood was present in each lateral ventricle, and a recent clot about the size of an almond filled the fourth ventricle.

Both sub-vaginal sheaths surrounding the optic nerves were tensely distended with blood, the optic discs were swollen, the retinal veins large and interrupted at the edges of the discs, but there were no hæmorrhages either in the discs or retinae.

On microscopic examination the sub-vaginal spaces were found to be distended with blood, and there were unmistakable evidences of inflammation (in the form of swelling of the connective tissue and multiplication of nuclei) in the pia sheaths surrounding the nerve, in the connective tissue trabeculae which run across the sub-vaginal space, and in the dense outer fibrous sheaths (see Fig. 12). The extravasated blood had, here and there, made its way between the bundles of fibres forming the pia and dura sheaths, and numerous red blood corpuscles were found, both in transverse and longitudinal sections, scattered amongst the nerve fibres of the optic nerves themselves. The corpuscular elements between the nerve bundles behind the lamina cribrosa were much more numerous than normal; the vessels in the optic discs and retinae were dilated and engorged with blood, the nerve fibres in the optic discs seemed fairly normal; but the corpuscular elements between the nerve fibres seemed in considerable excess.

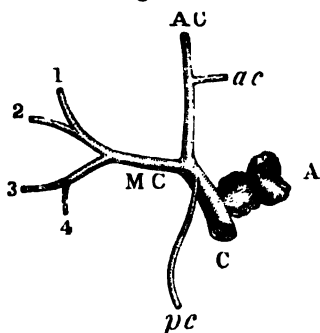


FIG. 11.—Aneurism of the Left Internal Carotid Artery in the case of J. W. Natural size. A, aneurism; C, internal carotid; MC, middle cerebral; 1, 2, 3, and 4, branches of the middle cerebral; AC, anterior cerebral; ac, anterior, and pc, posterior communicating arteries.

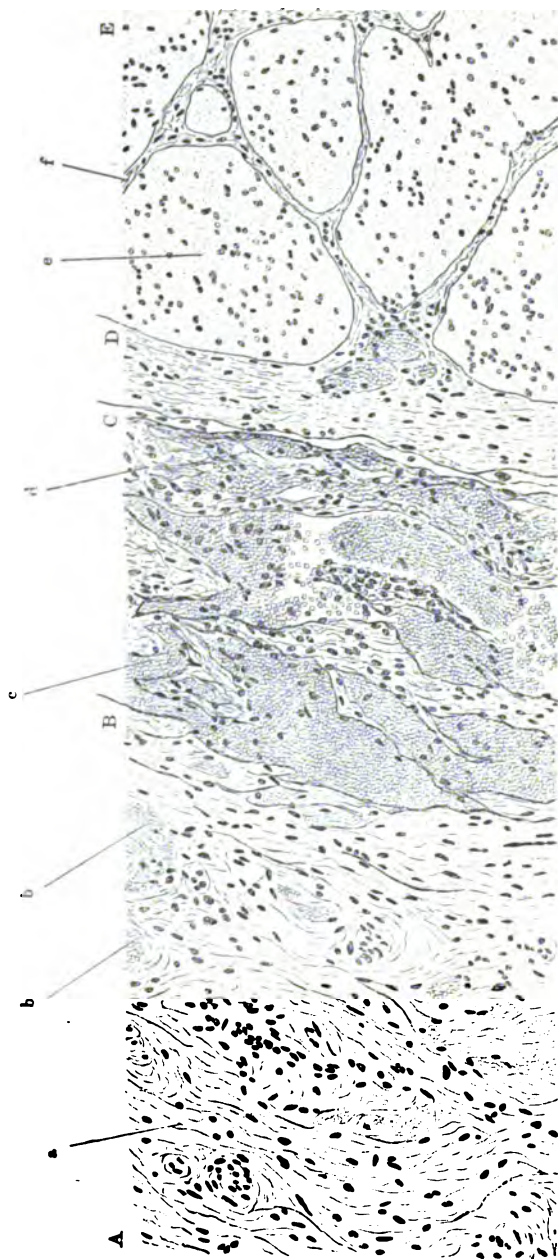


FIG. 12.—(Camera Lucida Drawing of a portion of a Transverse Section through the Optic Nerve and its Fibrous Sheath a little distance behind the Lamina Cribrosa, showing the Sub-vaginal Space distended with Blood, Inflammatory Changes in the Fibrous Coverings of the Nerve, and an Excess of Corporcular Elements in the Trunk of the Nerve itself.

Stained with Borax Carmine, cleaned with Alcohol and Oil of Cloves, and mounted in Zylol Balsam. Hartnack, oc. 8, obj. 8; Tube out; and Drawing reduced from $1\frac{1}{2}$ to $\frac{1}{4}$ inches.

A to B, portion of the outer fibrous sheath; B to C, sub-vaginal space; C to D, pia sheath of the nerve; D to E, portion of the optic nerve trunk; E, fibrous tissue of the dura sheath studded with numerous, large, deeply-stained connective tissue corpuscles; b, b, collections of blood corpuscles between the bundles of fibres; c, trabeculae of connective tissue passing across the sub-vaginal space, which is distended with blood corpuscles, the connective tissue corpuscles are proliferating; e, bundle of nerve fibres lying between the outer pia sheath and the fibrous tissue trabeculae (f); numerous deeply-staining corpuscles and some red blood discs are seen between the nerve fibres. The corpuscles of the connective tissue trabeculae (f) are also in excess.

Heart, Kidneys, etc.—The aorta and coronary arteries were somewhat atheromatous. A "fibroid" tumour, about the size of an ostrich egg, sprang from the uterus; the other organs, including the heart and kidneys, were fairly healthy.

Remarks.—In this case the rupture of the aneurism and the resulting meningeal hæmorrhage were attended with epileptiform convulsions, followed by violent excitement and coma—a mode of onset which is not rare, but which is much less frequent than might theoretically be supposed.

The fact that the patient lived a fortnight after the first extravasation, and, indeed, practically recovered from the effects of the first rupture, is remarkable; for recovery after a large meningeal hæmorrhage, such as this was, is of the greatest rarity. The late Dr Hilton Fagge, whose premature death I, with all who take an interest in scientific and practical medicine, so deeply deplore, states in reference to this point: "Meningeal hæmorrhage also seems constantly to prove fatal within forty-eight hours."¹ (He is speaking, of course, of non-traumatic, meningeal hæmorrhage due to the rupture of an aneurism.) While Nothnagel, in answer to the question, "Can meningeal hæmorrhage be absorbed?" says, "If of large amount they probably *prove invariably fatal*;"² and again, "The accidental discovery of certain appearances at post-mortem examinations in a few cases proves that reabsorption of the extravasation and recovery, where the hæmorrhage was very small, is a possible occurrence. For the cases in which the affection can be diagnosticated, however, death seems to be the invariable termination."³

The very marked elevation of temperature is noteworthy. Whether this rise was preceded by the initial fall, which Charcot, Bourneville, and others have shown to be present immediately after a hæmorrhage *into* the substance of the brain, was not ascertained. The rupture occurred, it will be remembered, in the middle of the night, and at the time of Dr Affleck's visit next day the temperature was already markedly elevated.

The fact that the extravasated blood made its way along the sub-vaginal spaces, and produced inflammation of the pia sheath of the optic nerves, swelling of the optic papillæ, and, what I take to be, slight commencing neuritis in the nerve trunks, is a point of great interest, and has an important bearing upon the case which I will next relate.

V.—*Case of Meningeal Cerebral Hæmorrhage and Meningitis in a case of Hæmophilia; Headache; Vomiting; Loss of Vision; Double Optic Neuritis; Paralysis of the Left Facial Nerve; Temperature of 104° F.; Cheyne-Stokes' Respiration; Facies Hippocratica;*

¹ *Principles and Practice of Medicine*, vol. i. page 503.

² *Ziemssen's Cyclopedia*, vol. xii. page 174.

³ *Loc. cit.* page 179.

Recovery of Consciousness at the end of Three Weeks; Gradual Convalescence; Severe Hæmorrhage from the Bowels; Severe Epistaxis; Recovery, with Optic Atrophy and Marked Limitation of the Field of Vision.

Mr J. B., æt. 18, the subject of the hæmorrhagic diathesis, but who had never previously complained of his head or manifested any nervous symptoms, slipped while skating on the 14th of January 1885, and fell, alighting in a sitting position on the buttocks.

He felt much shaken, and vomited immediately after the fall, which was, however, a very trivial one, and would probably have been unnoticed by most young men of his age.

During the next few days he continued to go about, complaining, however, of pain in the back of the head.

On Jan. 19th the headache was very severe; he vomited, and was obliged to go to bed.

From Jan. 19th to Jan. 31st, during which time he was attended by Dr Morris, and seen occasionally by Dr Drysdale and his uncle Dr Bonnar, of Stockton-on-Tees, these symptoms (severe pain in the back of the head and vomiting) continued, the temperature rose, and the patient became totally blind and partially unconscious.

On Jan. 31st, when I saw him with Drs Morris and Drysdale, the condition was as follows:—

He was semi-unconscious, but could be roused; answered questions when loudly spoken to, complained of pain in the back of the head, and moved his arms and legs when told to do so.

The pupils were widely dilated and quite insensible to light, the right being somewhat smaller than the left; the left side of the face was paralyzed, the conjunctival reflex on that (the paralyzed side) being much less distinct than on the opposite (sound) side; there was also paralysis with some resulting external strabismus of the right internal rectus muscle, and some loss of power in the left hand and arm, but none in the right arm nor in either leg.

So far as could be ascertained—but this point was not very satisfactorily determined owing to the semi-comatose condition of the patient—there was some loss of sensibility in each upper extremity.

The *plantar reflex* was very much diminished; the *knee-jerk* could be elicited on both sides, and was in no degree exaggerated.

There were no spasmodic twitchings, tremors, or convulsions. The *urine* and *fæces* were being passed involuntarily; a bed-sore had formed on the back.

The patient was totally blind even to a bright light thrown into the eye with the ophthalmoscope. There was exceedingly well-marked, in fact intense, double optic neuritis.

The temperature was 102°·3 F.; and the pulse 98, regular, and

of fair strength, the pulse wave being delayed, and the impression of a slower pulse, than was actually present, being conveyed to the mind of the observer.

During the twelve hours previous to my visit the unconsciousness had become greater, and all the other symptoms considerably aggravated.

The gums were spongy and inclined to bleed; the tongue was somewhat dry; swallowing was not interfered with.

The lungs, heart, and all the great viscera of the thorax and abdomen, including the peritoneum, were healthy.

Diagnosis.—The opinion which we formed as to the nature of the case was:—*Firstly*, that the patient was suffering from an effusion of blood at the base of the brain and some resulting meningitis; and, *secondly*, that this extravasation of blood had probably resulted from the fall on the ice which has been described above.

Prognosis.—In the presence of such grave and rapidly progressive symptoms, the prognosis was necessarily very serious; and had the condition depended upon any of the ordinary causes of meningeal hæmorrhage or acute basilar meningitis (such as tubercle, fracture of the base of the skull, perforation of the tympanic cavity by a suppurative inflammation, or epidemic cerebro-spinal meningitis), the prognosis must, I think, have been well-nigh hopeless; but believing, as we did, that these conditions (and also syphilis) could with certainty be excluded, and that the symptoms depended upon a blood extravasation the result of the hæmorrhagic diathesis and not of a ruptured aneurism, we ventured to suggest that there was still some probability of recovery, the grounds of which opinion were duly explained to the patient's friends.

Treatment.—The head was shaved and ice continually applied; the patient was placed on a water bed; good nutritious soups, jellies, and milk were given as food; and iodide of potassium, in ten grain doses, was administered internally.

Subsequent Course of the Case.—For the account of the after progress of the case I am indebted to Dr Morris, who very kindly took great pains to furnish me with careful notes of the subsequent course of events. He writes: "After our consultation on the 31st, the case assumed a more hopeless character; for some days there was low muttering delirium from which the patient could be roused, though for a time he was perfectly unconscious; the temperature rose, reaching as its highest point 104° F.; the pulse increased to 120; the respirations became spasmodic and irregular, and presented in a typical degree the Cheyne-Stokes' character; collapse threatened, *facies hippocratica* ensued, and the end was looked for. Aconite lowered the pulse to begin with, afterwards the great prostration was relieved by brandy and champagne. Improvement then slowly but gradually took place."

On Feb. 7th the pupils responded slightly to a strong light, the

left iris contracting in an irregular manner, first on the inside of the pupil, and in two days on the outside.

On *Feb. 12th* both pupils were still dilated, but slightly sensible to light. The patient stated that "he had gleams of light, but very indistinct."

In intellect he was now perfectly clear, and somewhat interested in passing events, and too much inclined to enter into conversation. When he became fairly conscious, fully three weeks had elapsed; this he could not at all understand. His illness, he said, "felt like the dream of a day."

The pulse and temperature were now normal, and the excretory functions naturally performed; the urine contained a slight trace of albumen, its sp. gr. being 1015. There was occasional slight hæmorrhage from the gums.

On *Feb. 17th* there was rather severe hæmorrhage from the bowels, which continued for three days. During this attack the iodide was discontinued, ergotine was injected subcutaneously, tannin and ergot administered by the mouth, brandy given freely, and lime juice *ad libitum*.

On *Feb. 19th* he said "he could see men as trees walking."

On *Feb. 26th* he had rallied from the bleeding from the bowels, but was attacked with severe epistaxis; it continued for six hours, and was finally arrested by subcutaneous injections of ergotine and plugging the nostrils.

On *March 7th* vision had so much improved that he recognised Dr Morris when he came into the room, and could tell the hour on his father's watch.

On *March 12th* Dr Morris wrote:—"Since the nasal plug was removed everything has progressed most satisfactorily; he is very happy and contented, and likes to be read to for a short time; very much pleased to have a chat with a friend, and making clear and intelligent inquiry about passing events. The left-sided facial paralysis was still very distinct, and there was still some loss of power and defective sensibility in the fingers, chiefly the ring and little fingers, of the right hand. The left pupil was now 3 lines in diameter, and contracted sluggishly under a moderate light; the right pupil measured 2 lines, and did not contract under any light. There was still double vision. Sight in the right eye was much more defective than in the left. When the right eye was shut he could see quite clearly, but when the left eye was shut the object was obscured, and the face of a man seemed distorted; when he looked steadily from the chest to the top of the head he said, 'Your head looks to me as if it had sunk between the shoulders;' and on looking from below up slowly there was always a point much more obscured than the other parts, which seemed to be the result of a small band of the retina being deficient in sensibility." (This scotoma in the right eye was still perceptible when Dr Argyll Robertson examined the patient in September, see below.)

He was now almost free from pain, eating and sleeping well and making flesh. He always felt the atmosphere in a dull state, "as if," he says, "thunder were to follow." He sat up yesterday in bed for a short time.

It was agreed to substitute arsenic and iron for the compound syrup of the phosphates and strychnine, which he had been taking for some little time.

On *March 26th* there was a slight hæmorrhage from the posterior nares, which was stopped by the application of cold and compression of the carotids.

On *March 30th* he was dressed, and sat up for about an hour.

On *April 10th* he remained out of bed for six hours with comfort, and could read every alternate half hour with pleasure and profit.

On *April 13th* the pupils were nearly equal in size, and the reflex contraction to light was fairly good in both. The facial paralysis had almost passed away, but there was still slight strabismus; vision was still very dim, especially in the right eye; he could see best in a subdued light; bright sunlight pained him.

On *April 15th* he was up for the greater part of the day, downstairs for a time, and able to take a short turn in the garden. Though steadily improving he was still weak and anæmic. He occasionally felt a tightness over the forehead, but there was no headache.

On *May 6th* he came over to see me in Edinburgh; the facial paralysis had now disappeared; there was still slight strabismus and double vision; marked contraction of the visual field in both eyes, but especially in the right. On *ophthalmoscopic examination* both discs were seen to be undergoing white atrophy. He was advised to rest the eyes from all work for at least six months, to continue the iron, and to take strychnine.

On *September 15th*, when I again saw him, vision had distinctly improved; but as he was very anxious about the condition of his eyes, I sent him to Dr Argyll Robertson, who examined him, and kindly wrote me as follows:—"The atrophic condition of the nerves has, I have great hopes, become arrested, and there is a fair prospect that with a prolonged course of strychnine some further nervous energy may return. The contraction of the field of vision in the right eye is peculiar, but not, I think, of a bad type. He should rest his eyes from work for a few months yet."

Dr Argyll Robertson has since been kind enough to furnish me with the following additional notes of his examination:—"Has had double optic neuritis; has now white atrophy of the discs (not extreme); the retinal vessels somewhat contracted. Vision, he states, has been recently improving. Left eye with -0.75 dioptics, $V = \frac{20}{50}$ nearly. Right eye, $V = \frac{20}{100}$. In right eye large scotoma in the field of vision, below and to the outer side, extend-

ing from about 30° to 60° from the centre; thereafter field of vision good towards the periphery. To the upper and outer side the scotoma extends from about 30° to the extreme periphery; to the inner and upper side the field of vision about normal. In the left eye there is no marked scotoma, except a small one below, about 30° to 45° , but peripheral vision to all directions much dulled.

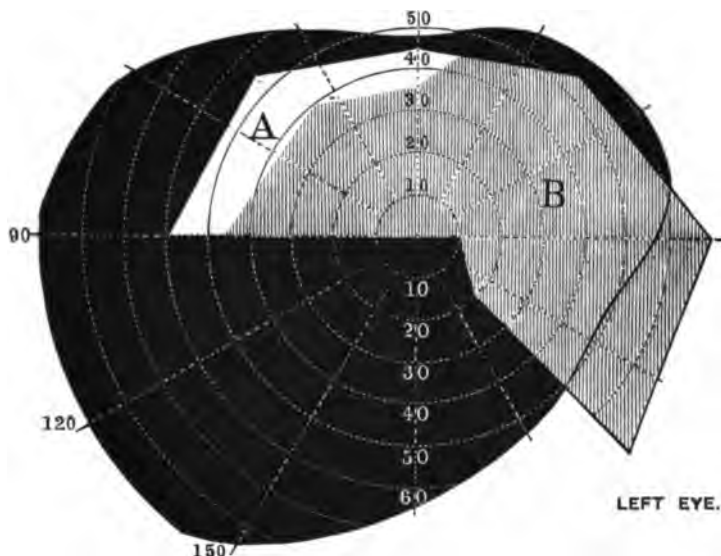


FIG. 13.—Chart of the Field of Vision in the case of J. B.

The dark area represents the extent of the normal field which was lost in this (the left) eye on March 30, 1886.

Vision was clearer over the area marked A than over the area B.

On the inner (nasal) side, the area of vision extends beyond the normal average (50° - 55°) at the periphery.

The field for colours is not represented. The fields for blue, red, yellow, and green were all contracted. The yellow field was peculiar, inasmuch as it presented on the temporal side a long-tailed projection, which extended considerably farther outwards towards the periphery than the fields for blue and red.

Since the date of Dr Argyll Robertson's examination there has been progressive but slow improvement in the left eye, and some slight improvement in the right.

On March 30th Dr Stirling, assistant in the Eye Wards of the Royal Infirmary, very kindly mapped out the field, both for ordinary and coloured vision, with the result (for ordinary vision) shown in Figs. 13 and 14.

On April 28th, 1886, in answer to a request for a brief statement of his recollections of his illness during the acute stage and of his present condition, the patient wrote me as follows:—"I remember little or nothing of my illness from the fifth day or so

after its commencement until I became conscious. I fell on the ice on the 14th January 1885, and took to bed with a severe headache on the 19th. The headache became more severe, and I fancied I saw strange things, such as screens and partitions hiding parts of the room. After this I remember nothing but dreams, except knowing that three doctors (Drs Morris, Drysdale, and

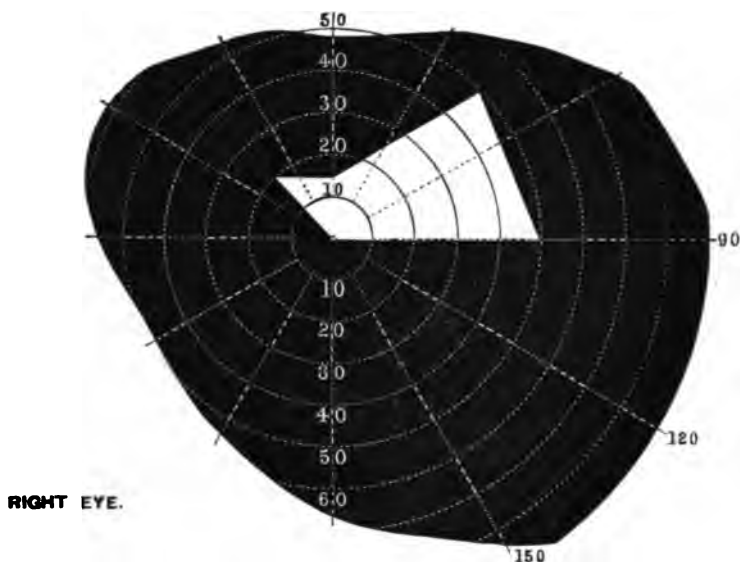


FIG. 14.—Chart of the Field of Vision in the case of J. B.

The dark area represents the extent of the normal field, which was lost in this (the right) eye on March 30, 1886.

The field for colours is not represented. The fields for blue, red, yellow, and green were all much contracted, the field for green being in this eye larger than that for yellow—a peculiarity which Dr Argyll Robertson tells me is somewhat rare.

Bonnor) came to see me, and then yourself; also having my head shaved. (*The following is obtained from friends*):—I was very low the same day as you were here; was unconscious for about three weeks. During these three weeks I always retained the power of swallowing and of speech. For one or two nights I seemed to suffer a great deal; was excited; breathing very rapidly until the breathing stopped for a few seconds—this last was repeated several times; became so low that I could not be moved in bed. (*From memory*) When I become conscious, found myself totally blind and very weak. Sight gradually became a little better as I gained strength. I now feel almost as strong as ever I was. There is a little numbness in my feet and two or three of my fingers. My sight is still improving, and I am beginning to see a little with the lower half of my eyes. I have commenced to study music."

Remarks.—This case is one of great interest—*firstly*, because of the rarity of the lesion, if, as I think there can be little doubt, the symptoms were due to an extravasation of blood at the base of the brain and subsequent meningitis; and, *secondly*, from the fact that recovery took place after what I take to have been a copious meningeal hæmorrhage, and after the symptoms which have been described were developed, and even after the *facies hippocratica* was manifested.

The early appearance of such intense double optic neuritis, with such complete and early loss of vision, can only, I think, be satisfactorily explained by supposing that the extravasated blood had made its way into the vaginal spaces surrounding the optic nerves, and interfered with the nervous structures, partly by direct pressure, and partly by the inflammatory changes which were subsequently established by it.

That blood extravasated at the base of the brain does frequently take this course and tensely distend the vaginal sheaths, I have repeatedly been able to demonstrate *post mortem* in cases of fracture of the base of the skull with extensive blood extravasations, and also in the case of aneurism of the internal carotid artery described above (see Case IV. page 97).

In that case, microscopical examination has further shown that the extravasated blood which made its way into the sub-vaginal space produced inflammatory changes in the pia mater covering of the optic nerves, swelling of the optic discs, and with what I take to be commencing neuritis, both in the optic discs and nerve trunks behind the lamina cribrosa. That the double optic neuritis may have been produced by inflammatory changes passing downwards along the optic nerves from the cranial cavity ("*descending neuritis*") must, of course, be allowed, but it is, I think, more difficult to account in this way (than in the manner which has been suggested above) for the facts that vision was so completely lost at such an early stage of the case, and for the early occurrence of such intense papillitis.

The important bearing which these cases (IV. and V.) have upon the much disputed question of the mode of production of the double optic neuritis, which is so frequently associated with intra-cranial tumours, I hope to elaborate on some future occasion.

This case is also interesting inasmuch as it appears to be an example of isolated (non-hereditary or acquired) hæmorrhagic diathesis. The patient's mother died at the age of 45 from paralysis, having for 20 years been the subject of mitral disease; his father is alive and healthy; there were two other children—a brother and sister—both of whom are alive and well, and have never manifested any hæmorrhagic tendency. There has never, so far as can be ascertained, been any hæmorrhagic tendency in any of his parents' relatives.

II. — THE LEIFWORK OF PROFESSOR JAMES SPENCE —
THE HARVEIAN ORATION. DELIVERED AT THE ROYAL
COLLEGE OF SURGEONS, APRIL 12, 1886.

By JOHN A. MACDOUGALL, M.D., F.R.C.S. Ed., Carlisle, President of the
Harveian Society.

(Continued from page 23.)

WHILE Mr Spence was by experiment and research learning these lessons to which I have made reference, he had opportunity afforded him of testing in actual practice his anatomical knowledge and surgical skill. In that volume of the *Monthly Medical Journal* which contains his first paper upon ligature of the arteries, there is a case recorded by him of "Ligature of the Carotid for Hæmorrhage from Ulceration of the Face." This patient, despite the occurrence of hæmorrhage at the site of ligature, recovered, and his recovery was doubtless matter of encouragement to the young surgeon. And as the event proved he was the first of many, for Mr Spence was very successful in the ligature of arteries. This very success it was which rendered him so strong an advocate for ligature of the femoral in popliteal aneurism, and so little in favour of methods of compression. Yet strangely enough one of his cases thus treated had this extraordinary history, that the aneurism apparently cured by ligature in Scarpa's triangle reappeared, and was ultimately successfully dealt with, by flexion of the leg.

To only two out of the many clinical histories he relates in connexion with this subject, would I briefly direct your attention; for to both there appertain interest and instruction. Aneurisms of the subclavian and their treatment have always been matters of grave import to the surgeon. Ligature of the artery itself, ligature of the innominate, or ligature by Brasdor's method, have so often been followed by disaster, that in trying to find a safer method, it occurred to Sir William Fergusson that in cases of disease of the vessel in its middle or outer third of its course it might be well to combine amputation at the shoulder with the application of the distal ligature. To Mr Spence was it given to test the efficacy of the plan, and his is, so far as I know, the only case on record in which it has been practised. Although the result was not altogether successful, for the aneurism was not quite cured, there are some points in the case which may so materially have influenced the prevention of a successful issue that we may take courage from the story, and following the direction of Spence "to tie the axillary as high as possible before removing the arm," we may succeed in curing what is always a formidable condition.

Again, guided by the doctrine of Fergusson and of Roux, he dealt, and dealt successfully, with a varicose aneurism of the thigh. In this case, without disturbing the sac itself, and in this way avoiding

interference with the vein, he tied the vessel above and below the point at which it had been wounded. Valuable as the record was at the date at which it was written, it is may be in these times of less value, and yet I believe that the surgeon who has not implicit confidence in his management of antiseptics will after all find it a safer method than opening the sac and trying to close the aperture in the femoral vein. Acknowledging fully the value in certain cases of the old operation for aneurism, he believed such cases to be few in number, and he therefore held in high estimation and practised confidently the method of John Hunter.

Tumour growth was a subject that engaged much of his attention. Beginning his career at a time when microscopic knowledge was confined to the few, and when in the vital characteristics and in the life-history of a tumour were found the tendencies it possessed, he always relied upon them, and although deeply interested in the pathology and minute structure of new formations, the old ways by which he judged them were with him the foremost in importance as they were ever the readiest. That they served him well, and that he had good reason to trust them, his successful practice in this department of surgery amply proves.

I well remember how, when the first edition of his lectures was published, certain critics were hard upon what seemed to them as defective pathological classification and imperfect microscopic description of tumour formation. But his classification was based upon what I venture to think is the best foundation, that of clinical experience and observation; and in this connexion let me quote the words of another great surgeon, Mr Jonathan Hutchinson, who, teaching in later times and with the widest knowledge of pathology in its histological aspects, thus writes,¹ "Such groupings must be accomplished chiefly by observation of external features of similarity and of resemblance in general tendency. It is these conditions, rather than minute histological differences, which will be of chief assistance to the surgeon. . . . The surgeon cannot much longer content himself with the groupings which the microscopic pathologist offers." And again, "The revelations of the microscope in reference to new growths are inadequate to the needs of the practitioner who has to deal with them, and that the latter will in most instances help himself better by setting to work at accurate and detailed clinical observation." Spence's method was the method here so well advocated, and it was that which enabled him to disregard the previous doctrines of his school, and to advise, as he practised successfully, the removal of tumours growing under the sterno-mastoid, when from their history he believed them to be innocent in character. That this was a very distinct advance in the surgical treatment of tumours, and a fortunate demonstration of a great principle which to-day is confidently acted upon, must be fully admitted.

¹ *International Journal of the Medical Sciences*, No. clxxx. New Series.

The operation of amputation engages alike the attention of the general practitioner and the hospital surgeon. There is no surgical procedure which either will sooner or later be more certainly called upon to perform, and none in which, dependent on the way it is carried out, will the future comfort of the patient more surely depend. Very early in his surgical career Mr Spence devoted attention to amputation; for taught by Liston and Syme, strong advocates of the flap method, that it possessed every advantage, and should be generally practised, he learned in London and Paris that the surgical world did not all believe this dictum, and that the plan by circular incision had still many warm adherents.

The statement by the supporters of this latter method that the advantages supposed to accrue from the preservation of muscular substance in the flap were illusionary, because it quickly and entirely disappeared, drew Mr Spence's attention to this point; and with a view to its elucidation he made a number of dissections of old stumps, which have now a place in the Anatomical Museum of the University. By means of these he was enabled to prove that there was error in this belief, because the muscular fibres in the great majority of cases did not entirely disappear; and that even where they had apparently done so, there yet remained evidence of their previous existence in an advantageous thickening of the subcutaneous substance of the stump. Having satisfied himself in this matter, he threw in his lot with the masters of his school, and turned his attention to improving, by methods of his own, some defects at that time inherent in the operation by transfixion. He thus determined the advantages of a long anterior flap, the merits of which were then not recognised; and although many years came and went before, in 1858, his well-known modification of Teale's method was originated by him, there can be little doubt that throughout them all the subject was engaging his attention. That this plan of his is one of the highest value time has shown, for by means of it he did away with what were the difficulties of the Leeds method, and he yet retained all the undoubted advantages it possessed. The shorter length of the anterior flap is an immense gain, for it enables the amputation to be performed at a lower part in the thigh when the knee-joint is diseased, or a lower bone section made if the amputation be undertaken on a higher level. Now that the method of disarticulation at the hip-joint practised by Furneaux-Jordan has attained such success, and must in great measure, if not entirely, do away with amputation through the trochanters,—for, other things being equal, it is better to avoid the presence of a divided bone,—there is no point at which the thigh may not be advantageously removed by the long anterior flap of Mr Spence. In association with this portion of his work, there is one other plan of his to which I will make reference, and that is his mode of amputation at the shoulder. For ease in performance, for bloodlessness, for safety, for wide applicability, and for the

excellent results it gives, I know no other method to equal it. It has this great advantage, that even without skilled assistance the operator has, prior to its division, the axillary artery in perfect command.¹

These fresh modes of operation were largely the result of a well-nigh unique experience in this department of surgery, and they form a small part of the legacy he has left us regarding it. Statistics of amputations have often been quoted as a test of the efficiency of surgical hospital practice on the one hand, and of the dangers of the operation on the other; and the deductions drawn from them have not always proved accurate or reliable. There can be little question that to employ statistics usefully you must make a thorough analysis of totals and of the figures on both sides of a case, as well as a searching examination of collateral circumstances and conditions. You must have an exact acquaintance with all the facts of a case before you can safely generalize from it. He therefore insists upon the fact that in the formation of statistical statements not only should the special method of treatment have consideration, but that the whole circumstances of the case should be carefully recorded and fully considered. That he is right in this any one glancing over the very complete record he has left us of over 600 amputations performed by him personally can have little doubt, for one cannot miss observing what, indeed, most hospital surgeons realize but too frequently, the grave risks which pertain to prolonged shock, to hæmorrhage, and to the harm attendant upon a long journey following the receipt of a grave injury.

If there is one lesson more than another which this portion of his work emphasizes, it is that in the case of such injuries as demand immediate amputation there should be no delay, no removal to a distant hospital,—the surgeon first called should at once perform the operation. That any special mode of treatment or any operative skill can influence the result in many cases of this kind is impossible, for the patient is moribund ere the hospital surgeon sees him. That the practice of antiseptics has done away with some of the risks he points out is certain, for it is indisputable that the former scourge of surgical practice, pyæmia, has now largely disappeared, and that the disarticulations which, following his teaching, some of us practised in order to avoid the section of a bone which had been fractured, are now seldom necessary. But much still remains. All will admit the additional risks which multiple injuries—even of a slight character—bring to a patient, and that the issues in cases in which amputations are performed for disease depend largely on the condition for which the mutilation is practised.

¹ When discussing some time ago with a distinguished London surgeon the modes of amputation at the shoulder, I was struck by his remark that the Furneaux-Jordan plan of disarticulation at the hip was in all essentials similar to the method followed by Mr Spence in the removal of the upper extremity, and that the former plan of operation may well have been a direct outcome of the latter.

Mr Spence had a confident impression that amputation of the thigh was a safer operation when performed for articular caries than for synovial disease, but he failed to prove it as a fact; at the same time the results of excision of the knee and of amputation generally in those whose synovial tissues undergo this degeneration lend strong support to his belief.

That the subjects of necrosis are unfavourable for operation he also points out, but in those in whom the existence of malignant disease demand amputation he finds the highest mortality. At the same time he directs how such risk may be lessened, for his results taught him that fatal as the operation was when performed through the continuity of the bone affected, it not only diminished the chances of recurrence, but added to those of recovery if the removal was practised beyond the proximal joint. Certain moral factors, impossible to calculate upon previous to operation, either as regards their appearance or their influence, he also draws attention to, and that they play an important part for good or for ill each one of us must at times recognise. Full of value and full of interest are his deductions, for although one holds confidently the belief that some of the risks which patients ran in his time are now diminishing, as witness the success of transfusion in the hands of John Duncan, his teaching, here as elsewhere, is the result of a ripe and well-matured experience, and it is that which no surgeon can consider without finding light and leading in the perusal.

No student of surgery can examine closely the literature of the past without having his attention strongly directed to the subject of injuries of the head, and the interest thus excited is, if opportunity offer, certain to be maintained, for there are few departments of our craft in which there are greater differences of opinion as to operative treatment, and where the clinical problems at times presented are more difficult to solve. Spence thoroughly understood and had well considered all this, for if rich in the possession of memories of the past, we recall the old days spent in his wards, I feel sure that his teaching was never more to the point or more memorable than in connexion with an injury of the head.

"Never look on any injury of the head as too slight for anxiety and watchfulness." Words such as these, spoken, it might be, at the bedside of a patient with whom there seemed little amiss, caught the attention of the youngest student present; and when substantiating them he spoke of concussion, its symptoms and its treatment, of the risks which might follow it, and especially of the risk of passive hæmorrhage, a point upon which his teaching is of unique value, of the late period at which inflammatory symptoms generally make their appearance, and of the manner in which these dangerous sequelæ were most readily recognised and best treated, he taught a lesson invaluable to remember and fortunately difficult to forget.

Certainly a student of the works of the great surgeon of St
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Bartholomew's, Mr Pott, he recognised fully the truth of his observations on the dry and unhealthy appearance of wounds connected with contusion of the skull, and of the meaning to be attached to the presence of the puffy tumour indicating, as they both may when taken in connexion with certain accompanying symptoms, the existence of pus superficial to the dura mater. Holding these beliefs, he drew attention to the fact that in many cases, nay, in the majority, there is no true puffy tumour,—a mere baggy tumefaction or flattened swelling under and in the scalp tissue alone marking the site in the bone under which the harm lies.

But his acquiescence in the doctrines of Pott and his practice went further than this, for he was, in such cases as seemed to him to demand it, a strong advocate of the value of the operation of trephining. In compound, comminuted, or depressed fracture, in punctured fracture, in simple fracture where the symptoms do not yield to treatment, and in certain cases of intra-cranial hæmorrhage and suppuration, in all of these conditions he advises its employment, and through the cases he has placed on record he demonstrates alike its usefulness and the danger which attaches to delay in its performance. That his early practice in this respect was probably founded upon the teaching of others is not unlikely, but it was ultimately the result of a large and well-weighed experience, and is such as the Edinburgh School of Surgery should be especially grateful for, as the emphatic and reliable utterance of a master on a debateable point. Much has been said against the use of the trephine, but its success in the hands of Mr Spence alone demonstrates, to my thinking, how it may in such cases as I have noted be employed with perfect safety and with truest benefit.

He tells us more, however, than the times to use and the good that is likely to follow the employment of the trephine, for his experience had taught him that in cases where a large area of bone is depressed, Hey's saw may prove most useful in the division of the base of an impacted fragment, thus giving access to the removal of the depressed portion; and that when the trephine is employed it is most serviceable when applied, not, as is generally taught, on the sound bone bordering the fracture, but on the fissure which generally runs across the bottom of the fragments which are depressed. The operation, as he states, may notably prevent the occurrence of inflammation of the meninges, and it may be the means of averting that rarer issue—hernia cerebri, an issue he ever found fraught with the gravest risks, and one for which treatment, based, although it undoubtedly is, on pathological observation, did little good.

Unhappily, unable from his personal knowledge to lessen the anxiety attaching to the state of hernia of the cerebrum, or to recommend any very successful mode of treatment, he is able to speak hopefully in another condition which by many is regarded as well-nigh desperate—fracture of the basis cranii. Here, and his record is one in which many of us can join, he tells of repeated

recoveries, and emphasizes the importance of careful treatment instead of that folding of the hands to which hopelessness is but too apt to give rise.

We have it, as I have already noted, on the testimony of one of his early friends, that the surgical anatomy of the neck was with him, in the days when he laid the foundation of his future greatness, a favourite subject of demonstration. The credit which his anatomical knowledge, in connexion with this important region, brought to him then was more than maintained in after time, for his intimate acquaintance with the parts enabled him to undertake successfully the removal of large tumours growing deep in its triangles, and most intimately related with its great vessels and nerves. But much as we have to thank him for light and help in this relation, he will be better remembered as a pioneer among those to whose advocacy and success we owe the resource of tracheotomy in croup and in diphtheria, and for the proposition he formulated and has done so much to establish, that in such cases "the great and positive indication for operation is the immediate urgency of the suffocative laryngeal symptoms." We may justly regard him as a pioneer, for I find that he first performed the operation in a case of croup in 1856, at a time when its reputation employed in this disease was of the most uncertain character, and when, indeed, many surgeons were inclined to regard it as unjustifiable.¹

It was probably a knowledge of Trousseau's practice that led him to adopt it, and it was a fortunate circumstance that his first case recovered, for as he found in after days—and as his pupils, forewarned by him doubtless, have found also—success is uncertain, and the happy and the sad issues are apt to come in runs. That the results which were his are likely to be often obtained is doubtful, for after a *very* large number of operations he had the satisfaction of having saved one case at least out of every three. The operation performed with the greatest skill—performed always, as he once told me, and this after ten years of experience had been his, with anxiety; this, followed by the most careful and assiduous after treatment, can alone explain such satisfactory results. His experience negatived a belief in the unity of diphtheria and of true croup, and there are few lines of argument more strong and more striking than those employed by Spence, and gathered by him as an operating surgeon, against a doctrine which, I believe, has never quite gained ground in the North. And this opinion of his is not to be wondered at, for disappointment, which with each one of us stamps impressions more immemorably than good fortune, had taught him that the first four days well over, the chances are all in favour of the case of croup; whereas, when the subtle poison of diphtheria gave rise to the production of the membranous exudation, death might spoil at the end of some weeks what, so far as the operation was concerned, was a decided triumph.

¹ Cases of Tracheotomy in Croup, *Edin. Med. Journal*, 1857-58, pp. 673.

In croup, specific and non-specific, when medical treatment had failed, as in those cases in which foreign bodies had entered the air-passages, and in those in which boiling or irritant fluids having been swallowed laryngeal symptoms had made their appearance, he advised the resort to operative procedure without delay. Nothing, as he reckoned, was to be gained by waiting, for in croup or in oedema glottidis there was the great risk of pulmonary congestion being added to the laryngeal trouble, while in those instances in which a foreign body had lodged in the air-passages there was the imminent and ever present danger of suffocative spasm. That the practice thus insisted upon has been, and will yet be, the means of saving from certain death many whose footsteps have passed but a little way beyond the gateway of life, and in whom there centre unguessed at possibilities, all surgeons must be satisfied.

(To be continued.)

III.—HÆMORRHAGE FOLLOWING TONSILLOTOMY.

By J. WALKER DOWNIE, M.B., F.F.P.S.G., Lecturer on Diseases of the Ear and Throat, Western Medical School, Glasgow; Surgeon, Throat Department, Anderson's College Dispensary, etc.

THE following case, illustrating a possible, though fortunately a rare accident, is, I think, worthy of being put on record:—

When but a lad, the patient, Kenneth M'I., now 34 years of age, had what from his description seems to have been an acute tonsillitis going on to suppuration, and for the relief of which the doctor then in attendance on him lanced his tonsil. From that time on, the condition of his throat has been a source of almost constant annoyance. Two years ago he consulted me, when I noted in my case book, "both tonsils somewhat enlarged; chronic follicular tonsillitis," and that I had recommended abscission. This he declined to have performed, and in lieu of the radical cure I prescribed painting with sol. of perchloride of iron and with tincture of iodine alternately, combined with the internal administration of the tincture of steel. From that time I saw nothing of him till the 5th November last. He called in the evening, and, having made himself known to me by recalling his previous visit, said that he still complained of the disagreeable sensation on swallowing—a sensation of a something remaining in the throat still to be swallowed—with a frequently recurring stifled feeling in breathing, and that he had determined to have the operation performed that I before recommended to him.

His occupation is that of a police constable, and during the two years which have elapsed since he first called on me he had attended at the Throat Department of one of the Hospitals, near which he was stationed when on duty. There the physician had twice attempted abscission, failing to relieve him however.

Both tonsils being fixed in the usual way by fingers of assistant, I removed a small slice from the right by means of Physick's tonsillotome, as modified by Dr Morell Mackenzie, and from the left, a projecting piece of tonsillar tissue about the size of a horse bean, by means of the tonsil sickle. This was followed by the use of the tanno-gallic acid solution (similar to the gargle of the London Throat Hospital Pharmacopœia), sipped slowly by the patient.

There was perhaps a little more blood lost than is usual after such an operation, but by keeping patient constantly sipping at the gargle, at the end of 15 minutes it seemed entirely checked. I then prescribed a mixture containing 15 min. doses of the tincture of perchloride of iron, to be continued for a time, and he left well pleased to think that in all probability he was freed from his tormentor.

This was about 8 P.M. on the 5th November. At 2 A.M. I was called, the words of the messenger being "to come at once and see M'I., as he was bleeding to death." On arrival at patient's house, I found him in bed supported on his elbow, with a chamber-pot at the bedside fully a fourth part filled with blood. He had not, however, the appearance of a man who had lost a *large* quantity of blood. He was not at all excited, though friends around him were, and his pulse was 90, rather of a bounding character, and readily compressed. In explanation of matters I was told the following:—Shortly after leaving my house, and while on his way home, he felt an inclination to clear his throat frequently, and suddenly while doing so he got sick and vomited two or three times. This over, he felt well again, and continued on his way home, where he arrived within ten minutes. On clearing his throat and expectorating he found that all trace of blood had disappeared. This would be close on 9 P.M. He continued free from annoyance, apart from the slight pain consequent on tonsillotomy, till about midnight, when before retiring for the night he went to stool. His bowels being in a constipated condition he strained rather severely, and while doing so he felt a trickling at right side of throat necessitating frequent clearing. On coming to the light he discovered that his expectoration appeared to be nearly pure blood, and this continued—spitting about half-an-ounce every three minutes—till I was called at 2 A.M.

On examining carefully, after mopping out with a large pad of absorbent cotton fixed to a pharyngeal probe, blood seemed to collect rapidly at lower part of posterior wall of pharynx, and on expiration the quantity became visibly greater, and he required to expectorate. After repeated and careful mopping of the raw surfaces of the tonsils, no distinct bleeding point could be detected. Under these circumstances I felt sure that the application of a strong astringent would put matters right, and that very quickly; so after again mopping thoroughly, I applied, by means of the

probe with absorbent cotton, the strong liqr. ferri. perchlor. freely to both cut surfaces, and gave him a 3j. dose of liqr. ergot, and waited the result.

Saliva collected in the mouth, and on expectorating this was seen to be freely mixed with blood. At the end of fifteen minutes I repeated the application, later on repeating the ergot. Altogether, he had four doses of ergot (each 3j.), and the strong perchloride applied five times up till 3.30 A.M. The second application seemed to be followed by some benefit, as occasionally his expectoration was clear, then it became tinged with blood, and again became bright red.

At this stage I determined to make trial of, if possible, a stronger styptic, and with this end in view procured a 3iv. bottle of Hazeline—the active principle distilled from the bark of *Hamamelis Virginica*—then much lauded in our journals as a powerful styptic (smart hæmorrhage in case of cancer of tonsil quickly arrested, *Brit. Med. Jour.*, 31st October 1885, etc.) This I at once began to administer in the prescribed dose, 30 minims, in a little water, and repeated it regularly, neither applying nor administering anything else, at intervals of from 10 to 15 minutes for one hour and a half (giving 10 doses in all), without being able to detect the slightest benefit. The bleeding was still going on, I might say as profusely as ever, for every three or four minutes—despite my expressed desire that he should disturb his throat as little as possible—he expectorated close on a tablespoonful, the greater part of which was bright red blood.

There being little evidence of improvement, notwithstanding the various methods and remedies adopted, I now determined to call assistance, thinking that by such help the bleeding point, if hæmorrhage due to such, and not to general oozing, might be accurately determined, and torsion, acupressure, or the thermo-cautère applied. Consequently, about 5.30 A.M., I called on Dr Knox, surgeon to the Royal Infirmary, who kindly accompanied me to the case. For purposes of examination the patient was again seated in bed, in which position he at once complained of feeling faint, and while we were in the act of mopping out the fauces the patient suddenly vomited about a pint of dark red fluid, which relieved a sense of fulness he had over the gastric region. The fauces were then examined, and no trace of blood could be detected. He cleared his throat cautiously as directed, and the expectoration had but the faintest tinge of red. He was then laid down, and no more blood appeared during the few minutes we remained at his bedside together; so after directing an attendant to sit by him, and to feed him with chips of ice, we left, I with a distinct feeling of relief. At 9 A.M. I again visited him, and found that hæmorrhage had returned to a slight degree shortly after we left him, and had continued. I gave him 20 minims of tincture of perchloride of iron, and directed the constant sucking of ice to be

persevered with. At 12 noon I again saw him, and bleeding then appeared as bad as at 2 A.M. While in the act of mopping out his fauces, preparatory to swabbing with perchloride of iron, he vomited violently, the contents of his stomach thus discharged almost completely filling a two-pint basin. The gush with which this was discharged, together with its bright colour, for a moment startled me, and I then determined to again call assistance. Dr Knox was engaged at some distance, but Dr Patterson, surgeon to the Western Infirmary, was fortunately at hand, and he very kindly at once came to my assistance. The patient was caused to sit on a chair at his bedside, but he at once felt sick and faint, and vomited about half a pint of red fluid. He was then laid back on bed, and by the aid of a good light, and after cleaning parts with sponge on stick, Dr Patterson thought he detected seat of hæmorrhage, at the lower part of right tonsil in the substance of the tonsil.

Before attempting to ligature the carotid, which now seemed the right thing to do, Dr Patterson determined to apply the actual cautery. This he did to the suspected point, and also to the rest of the cut surface of the right tonsil, the tongue being kept down by spatula, the cheek protected by the bent handle of a spoon. The patient reclined on his elbow, and bore the application without a murmur, and the hæmorrhage was instantly arrested. The subsequent treatment consisted in patient lying perfectly still, with strict injunctions not to speak, a chip of ice constantly in the mouth, and 15 minims of tincture of steel in water every 15 minutes. From the moment of the operation on there was not a drop of blood lost. Next day the iron was continued at much longer intervals; he had beef tea and port wine, by the aid of which he rapidly gained strength, and on the fourth day was able to get up and change his room. By the end of a fortnight he was well and strong; the throat irritation had entirely disappeared, and he then left for his paternal home in the Highlands to recruit.

That the accident which here occurred is rare may be conceded, when a throat specialist of such extensive experience as Dr Morell Mackenzie, in his *Manual of Diseases of the Throat and Nose*, says under the head of operative treatment for enlarged tonsils, that he has only met with ONE such. His words are, "As regards hæmorrhage following excision of the tonsils, I have only once met with a case in which the bleeding appeared actually to endanger life; and this was before I had discovered the means of arresting tonsillar hæmorrhage, which will be presently described. The experience of nearly all writers points to the rarity of any serious hæmorrhage; but Velpeau has reported four cases in which the internal carotid artery was laid open, whilst a portion of the tonsil was being cut away with a bistoury, and a few years ago Mr M'Carthy successfully tied the common carotid artery at the London Hospital in the case of a patient suffering from continuous hæmorrhage after excision of a tonsil. In the great majority of

cases the bleeding soon ceases spontaneously, and it is only necessary to make the patient gargle and wash the throat with cold water for a few minutes. . . . In extreme cases, when the internal carotid has been laid open, the common carotid must be ligatured."

Before making any remarks on the subject, I should like shortly to refer to the few reported cases which I have traced for the most part by the aid of *Neale's Digest*.

I. And first, in an article entitled "Arresting Hæmorrhage after Resection of the Tonsils," in the *Gazette des Hôpitaux* for 1857, M. Nélaton reports the case of a lad whose tonsil he removed with very little loss of blood at the time, but more than forty hours afterwards profuse hæmorrhage occurred. On examination, after a time, hæmorrhage had ceased, but a small clot adhered to one of the tonsils, on the removal of which bleeding would doubtless have recurred. M. Nélaton cautioned the lad against moving his pharyngeal muscles, which is almost irresistible after this operation, and which frequently is the means of detaching coagula. This caution was well observed, and the bleeding did not return. Troublesome hæmorrhage from this cause, M. Nélaton says, is very rare, he having known of only three other examples. If the hæmorrhage, he states, had returned in this case, he would have applied the perchloride of iron.

II. The next case is one fully reported in the *Lancet* and *Medical Times and Gazette* for 1859, where Mr Stanley performed the operation of ligature of the common carotid artery on account of hæmorrhage following *puncture* of an inflamed tonsil.

The patient, a delicate-looking man, aged 24, subject to attacks of tonsillitis for years past, was admitted on a Monday with history of having, on the previous Friday, had a puncture made in his left tonsil by a surgeon, and that successive attacks of hæmorrhage had since occurred. At the time of the incision (which he considered relieved him), the loss of blood was very slight, and he was able to walk home. All went on well till the Monday night when the bleeding recurred, and on his admission he considered he had lost a pint of blood. Solid nitrate of silver was applied to the part, with the effect of apparently arresting the bleeding. Early in the morning, however, another hæmorrhage took place, when strong silver nitrate solution was employed. Between 10 A.M. and 2 P.M. he had lost about a pint and a half of florid blood. A consultation was then held, when it was decided to try the application of ice, and should bleeding still continue, to apply a ligature to the common carotid. For the next twenty-four hours the loss of blood was very trifling, but at the end of that time a fresh hæmorrhage occurred, and Mr Stanley decided to at once resort to the operation which he then performed, securing the vessel by a ligature of Glasgow twine about three-quarters of an inch below the bifurcation. Following the operation there were no untoward

symptoms, the hæmorrhage did not recur; the ligature fell on the fourteenth day, and in concluding his remarks at this time the house-surgeon says, "there does not appear to have been any cerebral symptoms of any kind except sleeplessness one night," which was referred to anxiety on the part of the patient to get to his home. This was on the 2nd December; on the 21st patient complained of headache, sickness and vomiting; he became irritable, sullen, and peevish. On the 24th he was seized with right hemiplegia, became insensible, and died in the evening. The condition of the brain, as seen at the autopsy, is first described, and then the condition of the tonsil. The only vessel given off to the tonsil was the tonsillar branch, the internal jugular was sound, and the internal carotid had not been injured. The remains of an abscess were found close to the tonsil.

III. The third case is one of hæmorrhage from the tonsil following *incision*, also reported in the *Medical Times and Gazette* for 1859, under the care of Mr, now Sir Henry Thompson.

The patient, a woman aged 35, had been suffering from acute tonsillitis, and two days previous to her admission to the Marylebone Infirmary a surgeon had punctured one tonsil, and on the following day its fellow, in the hope of letting out pus. Little, if any, was evacuated, but there was very free bleeding from both. There had been but little bleeding from that immediately following second incision, till late in the evening of the day on which she was admitted, when bleeding occurred. This continued with intermissions for an hour and a half, by which time the house-surgeon deemed it necessary to summon Mr Thompson. On his arrival patient was pale and almost pulseless. With his finger he examined and distinctly felt a small opening, as if from an incision in right tonsil, and from which blood was flowing freely. The bleeding had not been a continuous oozing, but had been almost suspended at intervals, especially when patient became faint. Mr Thompson at once made ready to place a ligature on the carotid, and while instruments were being got ready he determined, "though without much hope of being successful," to apply perchloride of iron. He carefully mopped the part dry by means of lint wrapped on left forefinger, and then applied the perchloride solution with a glass brush to the incision. After a few such applications the bleeding entirely stopped. There was no further return, and the woman ultimately made a complete recovery.

IV. The next two cases are reported in the *Lancet* for 1870, vol. ii, by Dr Wharton P. Hood, both cases of *excision* of the tonsil, followed by alarming hæmorrhage.

In his first case—hypertrophied left tonsil in a gentleman—Dr Hood had considerable difficulty in excising it, the obstruction to the passage of the bistoury being due to the presence of a small calculus. Hæmorrhage lasted for several hours, notwithstanding

the application of a variety of styptics—nitrate of silver, ice, perchloride of iron, etc. He was beginning to feel rather uncomfortable as to the result, when the patient suddenly felt sick, and vomited large quantities of partially digested food and coagulated blood. This completely arrested the hæmorrhage, which did not again appear.

V. In his second case, both tonsils were excised at 1 P.M.: slight bleeding continued till 3 P.M., when, after taking some food, it had increased alarmingly. Styptics were applied without controlling the hæmorrhage, and recollecting the beneficial effect of vomiting in this previous case, Dr Hood administered an emetic of a scruple of zinc sulphate. After the stomach had been thus emptied, and the retching had passed off, an examination of the throat showed that all bleeding had stopped.

VI. Amongst the "Foreign Gleanings" in the *Lancet* for 1870, vol. ii., there is mention of a case in which Billroth removed the left tonsil of an hysterical lady. In doing so, he pulled the organ energetically towards the mesial line, so as to secure a complete section. By this traction a fold of the pharyngeal mucous membrane was drawn out and cut with the tonsil. The bleeding was fearful, and the Professor considered that some large branch of the pharyngeal artery contained in the fold had been divided. The patient would not allow of the pressure of the finger within the mouth, so that compression was used on the carotid, and with success.

VII. The last case I shall refer to is one where, for hæmorrhage following tonsillotomy, the left common carotid had to be tied. (*Schmidt's Jahr.*, Band clxxxvi., 1880). Abscission of hypertrophied left tonsil in a woman had been performed in usual manner. Hæmorrhage after operation was not very great, but it did not cease after gargling with cold water—rather tended to increase. After application of lunar caustic and perchloride of iron it stopped for an hour, then recommenced, and was more profuse than before. Bladders of ice were laid on the neck, with ice to suck, which, for a time, diminished the hæmorrhage, but again it returned, and more violently. Patient's strength was failing, and three hours after tonsillotomy, the common carotid was tied with carbolized silk, and immediately afterwards the bleeding from the mouth stopped. Recovery was slow. There were no signs of hæmophilia in patient or her family, and Dr Lidén, whose case it was, thought that an abnormal ramification of the vessels was the cause of the hæmorrhage.

This complication, then, of an otherwise very simple, and in many cases very necessary operation is, as may be inferred from the small number of cases published in our journals, and from records of the experience of specialists on this point, a rare one.

I thus do not think it would be out of place to inquire particularly into the cause or causes of such a complication, that we may learn how best to avoid it, and how most effectually to treat it when it does arise.

When making inquiries as to the cause, we must first ascertain the possible sources of such an hæmorrhage; and here I would express my firm conviction that, in the operation of abscission of the tonsil, as long as we cut—with bistoury or with guillotine—on the inner side of the line of the faucial pillars, it is beyond the bounds of possibility to injure the internal carotid artery, however abnormal its cause may be. This is important, as the very thought of the close proximity of the vessel to the tonsil is a terror to many when called on to operate.

Of the cases quoted, where such an injury was likely (Cases II. and III.), where the tonsils were *incised*, the incision in all probability going a good way outside the line of the pillars, no such injury occurred, as was proved in Stanley's case on post-mortem examination, and in Thompson's case, by the mode of cure, which was not in keeping with such an hypothesis.

Of the other vessels in the immediate neighbourhood, the ascending pharyngeal artery, which lies between the internal carotid and the pharynx, is the only one which might possibly be damaged, and this only, I think, in unwarrantably free incisions into the tonsil, never in cases of abscission pure and simple. It might, again, be due to the hæmorrhagic diathesis. In none of the cases quoted, and certainly not in my case, was there any reason to suspect that the patient was the subject of such. In Case I. certainly not; in Cases II. and III. there were in each *two* wounds, whilst in each bleeding occurred from *one* only—a fact almost conclusive against the theory of such a diathesis. In Cases IV. and V. the method of arrest is against the idea of hæmophilia being the cause. In Case VI. the source is apparent, and in Case VII. Dr Lidén distinctly states that there was no history, personal nor family, of hæmophilia.

In cases where abscission of the tonsil is called for, we have that gland hypertrophied to a marked extent, usually the result of frequently recurring attacks of inflammation of the substance or of the follicles of that organ. During the acute stages of the inflammation the hyperæmia is very distinct; and this leads on to a true hypertrophy, in which, as shown by Virchow, the gland is not only increased in volume, but increased by a multiplication of all its constituent tissues and follicles. In the stage of hyperæmia the vessels are necessarily increased in diameter; and in order to nourish the resulting hypertrophied gland, the vessels remain permanently enlarged. To start with, the tonsillar branch (from internal carotid) may be abnormally large; but its importance, and therefore its calibre, is added to by the enlargement of the organ which it supplies with blood: the greater the increase

in the size of the organ, the greater must be the blood supply; and to this end, and in the same proportion, must the calibre of the artery be increased. This more than usually large vessel, then, embedded in the firm substance of the tonsil, may be unable to contract sufficiently after division, and thus may admit of considerable hæmorrhage.

So far, then, as regards the tonsil itself, and if the guillotine be used, the cut surface of the tonsil *should* be the only possible seat of hæmorrhage. If, however, the bistoury be employed, we introduce a new element of danger. The incision may not be confined to the tonsil, but one or other of the pillars may be scratched or cut, leading to free hæmorrhage, as in Billroth's Case (VI.); or should the bistoury not be probe-pointed, the mucous membrane of the posterior wall of the pharynx may be incised, resulting in troublesome bleeding. Thus to the list of sources may be added those two, which sources I should be inclined to term "extra-tonsillar," in contradistinction to the possible sources of hæmorrhage from the tonsil itself.

Having thus enumerated the more important of the possible sources of hæmorrhage, we next come to inquire how best this complication may be avoided; and if we are careful to make the cut internal to the line of the pillars, and to use such an instrument that we cannot injure the pillars or the posterior wall of the pharynx, we then know that any hæmorrhage which may follow is from the cut surface of the tonsil, and, if excessive, must be due to the increase in size of the tonsillar artery, or to incomplete division of that vessel, as when a slice is taken from one side. Those conditions are best fulfilled by employing the guillotine, and preferably that form recommended by Dr Morell Mackenzie. The objection to Fahnstock's, apart from its being of more complex mechanism, is that in cases where one or other or both pillars are unduly adherent to the tonsil, as the latter is dragged towards the middle line by the fork of the guillotine, the former may be injured by the cutting edge, and thus cause the accident we so ardently wish to avoid.

The dangers of the bistoury are, I think, well illustrated by Billroth's case; and we have also the four cases mentioned in the quotation from Mackenzie's work as having been reported by Velpeau, where "the internal carotid artery was laid open, whilst a portion of the tonsil was being cut away with a bistoury."

At first in my case I feared the hæmorrhage might be due, although I observed nothing of the sort at time of operation, to injury of the posterior pillar, or to scratching of posterior pharyngeal wall on the left side—the side from which tongue-like projection was removed from tonsil with bistoury; but, as was subsequently seen, the hæmorrhage was from the substance of the right tonsil, portion of which had been removed by use of the guillotine. Dr Knox and I, when we saw patient together, were prepared to

apply the thermo-cautery; but while examining the part, patient felt sick and vomited, and on subsequent examination no trace of hæmorrhage could be found,—a similar result, though in my case but temporary, to what occurred in Dr Hood's two cases (IV. and V.), where it had the effect of permanently arresting it.

Following the removal of the desired portion of the hypertrophied tonsil, sipping cold water, or better, the tanno-gallic acid gargle of the London Throat Hospital Pharmacopœia, slowly sipped, is sufficient to quickly check any bleeding which is present in ordinary cases. The latter can be relied on to check even comparatively smart hæmorrhage. Should this fail, however, the part should be well swabbed with strong perchloride of iron solution,—accompanied, possibly, with its administration internally at short intervals,—and should even this be without effect in checking it, I personally should now never dream of trying other styptics, but should at once, in those very exceptional cases, have resort to the actual cautery.

IV.—TREPHINING OVER THE MOTOR AREAS OF THE BRAIN. REPORT OF TWO CASES IN THE EDINBURGH ROYAL INFIRMARY, SUMMER 1885.

By W. B. MACKAY, M.B., M.R.C.S., late House-Surgeon, Edinburgh Royal Infirmary.

CASE I.—C. P., æt. 37, sailor. Admitted on the evening of April 20th, 1885.

Previous History.—Thirteen days previously he had been treated in the eye wards for suppurative periostitis of the orbital margin of the left frontal bone; this was opened by Mr Berry. Three days after the opening the temperature rose to 103° F., but the wound healed, and he was dismissed apparently well four days later.

State on Admission.—There was a puffy swelling over the left frontal bone as high as the frontal eminence, and extending down to the eyebrow and eyelid; a small scar on the eyebrow. Patient was dull and drowsy, and sat with his eyes closed, breathing heavily and rather rapidly (he had some bronchitis). Readily roused on being spoken to, and understood what was said to him, moving his hands and putting out his tongue as directed, but he was unable to utter a word—in fact, he was quite aphasic. Tongue dry, yellow fur; teeth covered with sordes. Pupils equal, slightly contracted, reacted readily to light. Temperature, 100°·2 F. Patient was put to bed; the puffy swelling incised at the eyebrow, but no pus came; a dressing was applied to this incision. Ice was applied to the head, and 2℥ croton oil given.

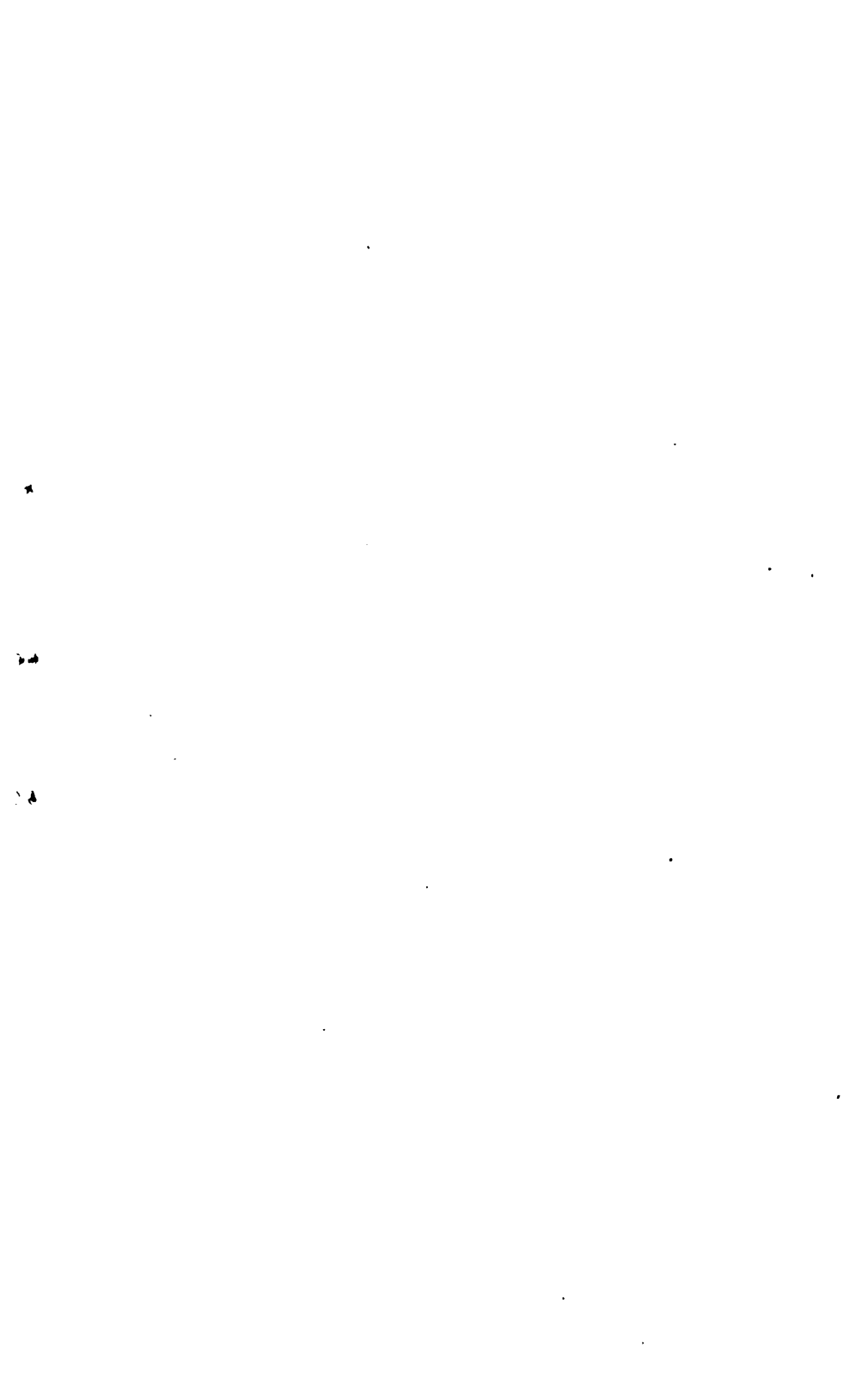
Next morning, April 21st, was in precisely the same condition. Prof. Chiene, who was consulted by Mr Berry, diagnosed intracranial suppuration, and recommended immediate trephining.

However, on further consultation, it was agreed to try the pushing of pot. iodid., and to trephine the next day if not improved. An enema was given, as the bowels had not acted, and free movement occurred. Patient remained in much the same condition till about 5.30 P.M., when a series of rapid clonic spasms of the muscles of the *right* side of the face occurred, the angle of the mouth, the ala of the nose, and the upper lip being violently twitched upwards. These spasms continued for about two minutes (about 80 per minute) and then ceased. The respiration for some minutes was of a typical "Cheyne-Stokes" character. Temp. 101° F.; pulse full; perspiring profusely. Reflexes tested later on; found superficial reflexes abolished on right side, except slight plantar reflex. About midnight it was noticed that there was right-sided facial paralysis. During night he passed urine in bed, and his breathing became somewhat stertorous. In the morning (April 22nd) it was found that there was complete right-sided hemiplegia. The patient winced on firm pressure in the left temporal region. Trephining was performed, Mr Berry operating; the trephine being applied 2 inches behind, and 1 inch above the external angular process of the left frontal bone. No pus was found in the diploë, nor between the skull and dura mater. The dura was punctured, some pus escaped. An opening was made and a director passed in, when about 2 ounces of pus escaped. The wound was dressed with carbolic gauze and salicylic wool.

Immediately on the flow of the pus there occurred rapid clonic jerking of the right side of the face, precisely similar to those previously noticed, synchronous with which were clonic closures of the jaws. At the same time the right arm was thrown into a series of spasmodic movements, there being convulsive flexion and supination of the forearm alternating with partial pronation and extension, while the fingers and wrist were alternately fully flexed and partially extended (grasping movement). The rapidity of these movements was about 80 per minute, and with short intermissions they continued for nearly two hours, gradually decreasing in intensity and rapidity. After the facial spasms ceased, the mouth remained open and the tongue was seen to be jerking slightly, and these movements were the last to cease entirely. When the spasms had all passed away the patient lay quietly; he seemed to recognise his wife, and passed his left hand caressingly over her; he also brushed aside his moustache, and buttoned up his shirt with his left hand. He swallowed some milk when given it. There was now complete hemiplegia on the right side. Patient gradually got worse; breathing became very stertorous; urine passed involuntarily. Pupils no longer reacted to light.

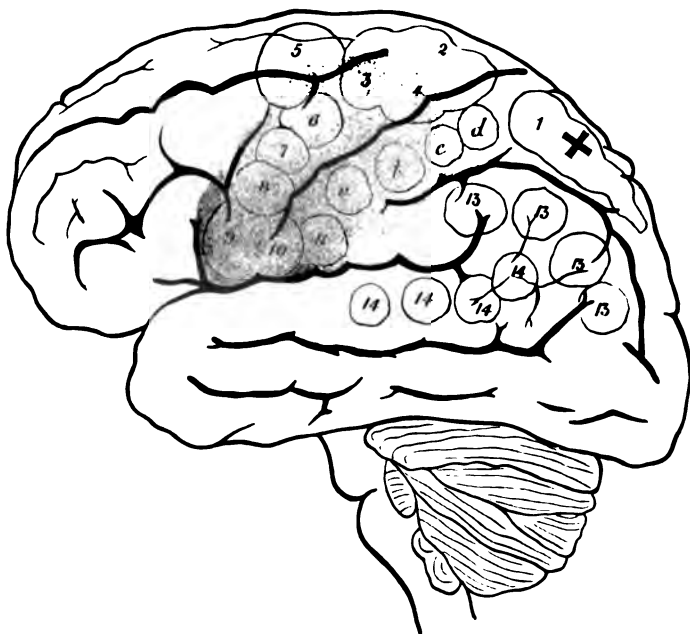
At 4.30 A.M., April 23rd, temp. 103° F., and it gradually rose, to 107°·2. Patient died at 6.30 A.M. Temp. half-an-hour after death being 107°.

Localization of the Lesion.—The presence of the aphasia pointed



TO ILLUSTRATE MR MACKAY'S CASES.

MOTOR AREAS ON SURFACE OF BRAIN.



W. B. M. delt.

Area 1. Advance of opposite hind-limb as in walking.

„ 2, 3, 4. Complex movements of opposite leg and arm.

a. b. c. d. Movements of fingers and wrist of opposite hand, (prehensile movements)

„ 5. Extension forwards of opposite arm and hand.

„ 6. Supination and flexion of opposite forearm.

„ 7. Retraction and elevation of opposite angle of mouth.

„ 8. Elevation of ala nasi and upper lip, with depression of lower lip, on the opposite side.

„ 9, 10. Opening of mouth with (9) protrusion, and (10) retraction of tongue. Region of Aphasia.

„ 11. Retraction of opposite angle of mouth. Head turned to one side.

„ 12. Centre of vision.

„ 13. Centre of hearing.

The shaded area corresponds to the convolutions found flattened and depressed at the P-M on Case 1. The trephine wound was over Areas 9, 10.

In No. 1 Area the site of the trephine wound in Case II. is marked with a x.

to the involvement of Broca's convolution, areas 9 and 10. The spasms of the face noticed on 21st April pointed to some irritation affecting areas 7, 8, and 11, and the gradual occurrence of complete hemiplegia pointed to a gradual spreading up and paralysis of all the areas about the fissure of Rolando. The trephine was therefore applied, so as to strike upon the lower part of the fissure.

After the escape of the pus apparently, areas *a, b, c, d* were thrown into spasmodic activity, along with Nos. 6, 7, 8, 11. (The above areas are according to Ferrier.)

This view was confirmed by the post-mortem, at which there was found:—"A small part of the frontal bone necrosed, with a small opening through the orbital plate at the outer side, through which pus had passed into the cranial cavity. Dura mater healthy, but bulged out on the left side. On reflecting the dura, the surface of both hemispheres was found to be bathed in pus, much thicker on the left side. The convolutions about the fissure of Rolando, and the inferior frontal convolution on the left side, were much flattened down, and the sulci almost obliterated. The left hemisphere of the brain was somewhat swollen, especially about the Island of Reil and surrounding parts of the frontal convolutions."

CASE II.—T. S., age 63, a gardener, admitted 22nd May 1885, complaining of loss of power in his right leg, and of "bumming" in his right ear.

History.—Fourteen years ago he received a severe cut on the *right* side of his head by the falling of a lump of coal. The wound healed well, but some time afterwards and ever since he has felt a dimness of vision in the *right* eye. Seven weeks before admission he fell down a stair, and received an injury to the *left* side of his head, in a situation precisely corresponding to the previous hurt. He was unconscious for some days, but the wound healed, and he was apparently well again. Since then he has noticed a dimness of vision in his *left* eye, with a gradually increasing weakness in his *right* leg, and a "bumming" about his *right* ear.

State on Admission.—Patient in walking puts all his weight on his left leg, does not step forward with his right leg, but only rests his weight on it a moment to step forward with his left. He feels giddy when he walks, or if he stoops his head. On examination, two scars were found on his head, in precisely corresponding situations on the opposite sides, a little behind and above the parietal eminences, the centre of each scar being about $1\frac{1}{2}$ inches from the middle line. There was pain on deep pressure at a point about half an inch behind and internal to the scar on the left side.

The precise condition of the right lower extremity was carefully examined by Drs James, Milne Murray, and Graham Brown, who found greatly impaired power in all the movements of the right foot, the right leg and thigh also greatly diminished in power, this being relatively more pronounced in the thigh than in the leg.

Reflexes.—Superficial reflexes, as high as the epigastric, greatly diminished on the right side, on the left side well marked. Superficial sensibility of right leg and thigh seemed slightly impaired. Patellar reflex well marked on the left side; on the right side extremely exaggerated, so as to produce almost tonic spasm, patient at the same time complaining of pain ("like cramp") up the thigh, back, and neck.

Eyes.—Posterior staphyloma in both eyes, worst in the right; great myopia, optic atrophy in both eyes. *Hearing*.—Dull in both ears, complains of "bumming" in right ear. Both tympanic membranes thickened. Tuning-fork points to bilateral nervous lesion.

Professor Chiene diagnosed the loss of power in the leg as due to an interference with No. 1 area (Ferrier) on the left side, and resolved to trephine. This he accordingly did on 3rd June, the operation being done under the spray, and the crucial incision made at the posterior end of the scar on the left side, and slightly internal to it. When the circle of bone was removed, no pulsation was seen in the dura mater, nor could any be felt; but by pressing the finger down towards the surface of the brain, pulsation then became perceptible. The dura mater was punctured with a Græfe's cataract knife, and about a drachm of clear serous fluid escaped. Pulsation could then be felt in the dura mater, and was made visible by temporarily replacing the circle of bone. This was again removed, a piece of protective coiled to act as a drainage-tube was put in, and the wound dressed with carbolic gauze and wood wool wadding.

Patient slept well that night, but complained of a beating in the wound. Next day, 4th June, wound dressed; drain removed. Patient seemed already to have more power in the leg. Dr Milne Murray examined him and agreed with this view.

7th June.—Was carefully examined by Dr James, who pronounced him decidedly stronger in the right leg. Patellar reflex much less exaggerated and no longer painful.

8th June.—Dressed, as he felt slight pain in the wound; healing well.

10th June.—Evening temperature, 101° F. The bowels were freely moved by aperients, and the temperature on the 11th—M. 99°, E. 99°·4, and never rose again above normal.

16th June.—Fourteen days after operation, patient was first allowed to walk about a little; was shaky in his movements, but used the right leg.

18th June.—Wound was found quite firmly healed, and a good deal of new bone already forming.

26th June.—Patient has meantime been walking every day, and has gained power and confidence in his right leg. Movements were carefully tested, and improvement found in all of them; patellar reflex only very slightly increased. Patient complained

much of the "bumming" in his ear; blister applied behind right ear; and pot. brom. and pot. iod. given internally.

Patient gained strength in the leg, and could walk with freedom, and even stand upon the right leg by itself. He was shown at one of the meetings of the Medico-Chirurgical Society.

When dismissed, the right leg was unimpaired in all its movements, and seemed almost as strong as it should be; the patient threw his weight on it with confidence, and stepped out as freely as with the left. He still complained of some "bumming" in the ear, but this seemed somewhat less, and he was greatly improved in spirits. Locally, there was much new bone formed closing up the trephine wound; no pulsation could be felt through, and there was no pain on pressure.

Localization of Lesion.—The principal symptom in this case, the paralysis of the right lower limb, might be—and, judging from the result of the operation, apparently was—quite accounted for by a lesion to area No. 1; which, however, does not fully explain the condition of the reflexes, etc., in the limb. These changes probably occurred secondarily. It is more difficult to account for the eye symptoms, which occurred on the same side as the injury. Could the optic atrophy be accounted for by a basal injury involving some part of the optic tract, the apparent non-crossing being explained on the hypothesis of "contre-coup?" The impairment of hearing might be accounted for by a basal injury involving the auditory nerve.

Again, the interference with sight and hearing might perhaps also be explained by a spreading of the lesion from No. 1 area to areas 13 and 14, which lie immediately contiguous to it, and are considered by Ferrier to represent respectively the areas for these two functions.

The above cases are interesting as showing with what precision it is now possible to locate the seat of lesions in certain portions of the cerebral cortex.

V.—SURGICAL CASES.

By JAMES P. BRAMWELL, M.D., L.R.C.S. Ed., Visiting Surgeon, Perth Infirmary.

CASE I.—*Epithelioma of the Tongue; Removal of the whole Organ; Death on the 17th day from Septic Pneumonia.*

About three months ago a man past middle age, employed as a "fish cadger," presented himself at the Perth Infirmary for examination of his tongue, and advice. The case was found to be one of epithelioma involving the whole organ. It was not ulcerated, however, and the tonsils, fauces, sublingual, and sub-maxillary glands were entirely free from secondary infection;

besides, the patient's general health was good. He agreed to have his whole tongue removed, and this was done by Sédillot's operation a few days after.

There was little hæmorrhage, and tracheotomy was not required. Tongue divided by wire-rope écraseur. The divided jaw was bored and tied with silver wires, and a large drainage-tube inserted below the chin. The wound was frequently dusted with iodoform powder, and the mouth washed with Condy's fluid.

For the first three days he was fed by peptonized enemata alone, and after this he could swallow milk and beef-tea fairly well. For the first five days after the operation nothing could have been more satisfactory than his condition. Pain gone, sleeps well, complains of nothing, looks bright and hopeful. On the sixth day circumstances changed for the worse. His temperature, formerly normal, now rose regularly at night to 101° or 102° , and he became irritable and impatient. He was put under full doses of quinine, and inhaled eucalyptus oil and turpentine as a disinfectant. Pulmonary symptoms now supervened, which never abated till the day of his death, seventeen days after the operation. The post-mortem examination revealed an inflamed condition of both lungs, with multiple disseminative abscesses scattered throughout both these organs.

Remarks.—Notwithstanding the use of every precaution to prevent septic pneumonia, the case proved fatal from this very cause.

CASE II.—*Ununited Fracture of Left Patella; Lister's Operation; Recovery.*

About a year ago a powerful young man came under my care in Perth Infirmary for fracture of left patella. He had been treated in the usual way for three weeks; but when I examined the joint, I found the fragments $1\frac{1}{2}$ or 2 inches apart. As there was not the least attempt at union, and the fracture transverse, I chloroformed my patient, laid open the joint very freely under antiseptic precautions, refreshed the surfaces, bored the fragments vertically in three different places, brought the surfaces into excellent position, and hammered in the wires after dividing them.

From first to last there was scarcely any appreciable constitutional disturbance, and the large wound healed by first intention. From his timidity, however, in using his leg, there is still some stiffness in the joint, which is gradually getting less by persistent exercise.

Remarks.—Considering the number of serious mishaps which have occurred in this operation, I certainly would not recommend it as a routine procedure; but in exceptional cases, like the one I have recorded, where union has entirely failed, we must risk something to secure a useful leg.

VI.—ON SOME OF THE PHYSIOLOGICAL AND THERAPEUTIC EFFECTS OF WATER AT DIFFERENT TEMPERATURES, WITH SPECIAL REFERENCE TO OBSTETRIC AND GYNÆCOLOGICAL PRACTICE.

By R. MILNE MURRAY, M.A., M.B., M.R.C.P.E., Physician for Diseases of Women, Western Dispensary, etc.

THE great change which the introduction of the use of water at high temperatures has effected in the treatment of certain gynæcological and obstetrical complications, is one of extreme importance. If we are to judge of its efficiency by the accounts given of it by those who have made practical application of it, we are bound to admit that it is destined to revolutionize the treatment of inflammations and hæmorrhages in other parts of the body than the pelvis.

For a long period the efficiency of cold applications in the checking of hæmorrhage, under certain conditions, has been known and practised. For centuries, in the case of post-partum hæmorrhage, for example, cold cloths to the abdomen, cold water and ice in the vagina, etc., have been regarded as routine practice, and their employment has been followed by undoubted relief of the symptoms in thousands of cases.

It is, on the other hand, within but very recent years that the use of water at, relatively speaking, high temperatures—at a temperature higher by 10° to 20° F. than that of the normal blood—has come to be recommended for the treatment of the same condition, and the experience of those who have employed it largely would go to show that its advantages far outweigh those of water at the lower temperatures.

The evidence of this greater efficiency of warm over cold water in controlling uterine hæmorrhage is based almost entirely on clinical evidence. The effect is supposed to be a twofold one, namely, upon the uterine muscle itself, and upon the bloodvessels, causing, that is to say, rigid tonus of the uterus, and more or less persistent spasm of the muscular tissue of the other. The fact that a stream of hot water, directed on the bleeding surface during an operation for vesico-vaginal fistula, or for repair of the perineum, at once arrests hæmorrhage, goes far to prove the second supposition; and the fact of the former is not difficult to demonstrate in a flabby and relaxed uterus after the third stage. Indeed, considering the intimate histological and physiological relations of the middle coats of the uterus and of bloodvessels, it is not difficult to suppose that a physical agent which affects the one must, in some degree at any rate, affect the other also.

Nevertheless, in spite of this more or less definite attempt at an explanation of its action, and the enthusiasm of many of those who have given it a trial, it is not a matter for surprise that in so

dire an emergency as post-partum hæmorrhage, obstetricians should hesitate to abandon methods they have been taught and have practised, for one which seems indeed their very antithesis.

While cold has been universally admitted as the great agent for causing spasm of bloodvessels and of allaying hæmorrhage, warmth, on the other hand, has been as widely credited with the opposite effect, that of the dilation of vessels and promotion of hæmorrhage. The effect of a bath of tepid water on an incised and bleeding wound is familiar to all. That warmth could, on the other hand, check bleeding seemed naturally but a paradox. Nor have the attempts which have been made to explain the astringent effect by the votaries of heat been by any means convincing.

Dr Emmett, whose name more than that of any other is associated with the advocacy of the use of hot water, in explaining the action of heat on the peripheral circulation, writes as follows:—"Heat, unless at a temperature which would destroy the parts, does not act as promptly in causing this contraction (of bloodvessels) as either electricity or cold. In fact, its immediate effect is to cause relaxation, and to increase the congestion of the parts; but if its application be prolonged, reaction ensues, and contraction takes place—in other words, the reaction from heat is contraction. The capillaries are excited to increased action, and as they contract from the stimulus of their nerves, the tonic effect extends to the coats of the larger vessels, their calibre in turn becomes lessened, and with this approach to healthy action their congestion is diminished. The popular belief is that heat relaxes and increases the congestion of parts, and such indeed is the case at first. But a hot poultice is never applied with the object of increasing the congestion, but as any 'old wife' would express it, to draw the 'fire' or inflammation out—in other words, it lessens the congestion by stimulating the bloodvessels to contract. . . . The immediate effect of cold, therefore, is contraction, and with reaction comes dilatation; but the reverse is true of heat, which causes at first dilatation, followed, however, by contraction."

This extract is a striking instance of an attempt to square a pre-conceived idea with an observed fact. The author has held for years that warmth is a promoter of hæmorrhage and a dilator of small bloodvessels, but he has recently found that warm water is efficient in contracting bloodvessels and controlling hæmorrhage. He attempts to reconcile this apparent contradiction by affirming that the first effect is dilation, but the after-effect is contraction. I do not here stop to discuss the various physiological statements made in this extract, but would merely remark that it is but a sorry recommendation of hot water as a uterine hæmostatic to an accoucheur struggling with a case of post-partum hæmorrhage, to say, "Inject warm water into the uterus. It will certainly increase the

hæmorrhage at first, but if you go on long enough, the bleeding is bound to stop when the reaction sets in!"

Emmett is not singular in the failure of his attempts to explain the action of this agent, and it is well that others have paid less attention to the explanations given of its action than to the reality and efficiency of the action itself.

I have recently been engaged in investigating the action of stimuli of various sorts on the muscular tissue of the uterus, as well as non-striped muscle generally, and as the results bear in a very direct way upon the effect of heat and cold in controlling hæmorrhage and promoting muscular contraction, they have seemed to me of sufficient interest to warrant me laying them before the Society to-night.

I divide my paper into two parts. In the first I consider "The physiological effect of thermal stimuli when applied directly to muscular and vascular tissues;" and in the second I purpose making some deductions of therapeutic and practical interest from the results of these observations.

I. THE PHYSIOLOGICAL EFFECT OF THERMAL STIMULI ON NON-STRIPED MUSCULAR TISSUE.

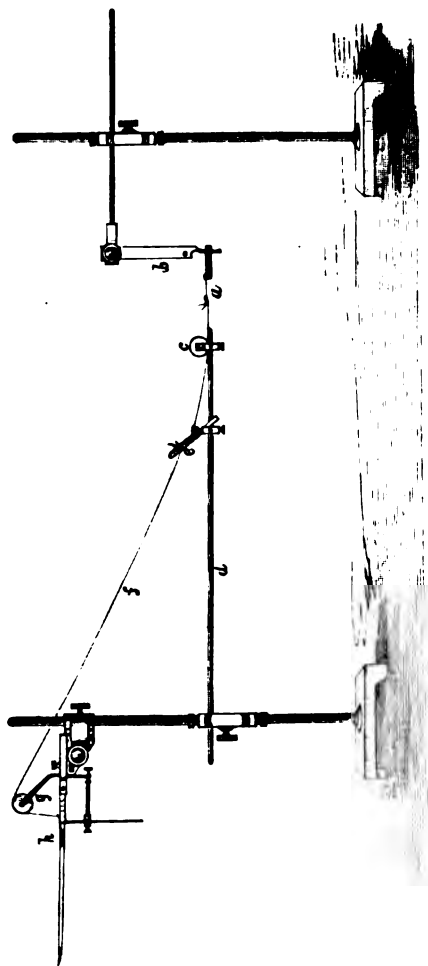
The heat was applied by means of water, and for convenience I shall divide the temperatures experimented on into three divisions—

- a. Cold, from 32° F. to 60° F.
- b. Intermediate, from 60° F. to 100° F.
- c. Hot, from 100° F. to 120° F.

Mode of Experiment.—The experiments have been conducted on the uterus of rabbits both pregnant and non-pregnant. I have at previous meetings of the Society shown and described the mode of recording the observations and some of the tracings obtained, but for the sake of those Fellows here who may not have been present then, I may briefly recapitulate my description.

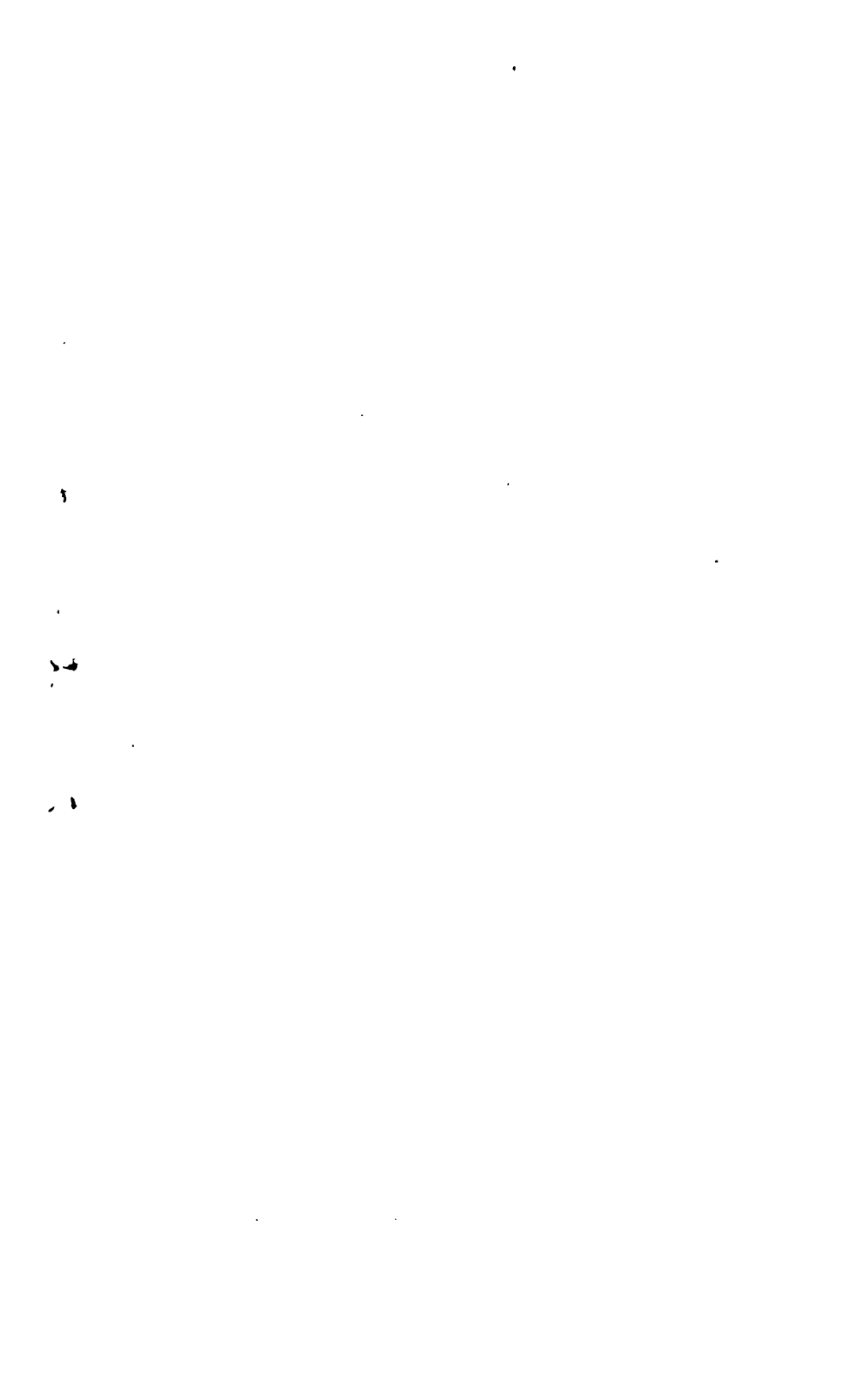
The animal being fully anæsthetised and secured, the abdomen is opened in the middle line from 1½ inches above the pubis down to that bone. The bladder, which is generally found to be distended, is emptied by pressure and pushed aside, and the vaginal tube or uterine cornu, as desired, is gently withdrawn from the abdomen. Supposing the uterine horn is to be made the subject of experiments, it is carefully raised from the incision, and adjusted at or near the vaginal end between the jaws of a gilt clamp, *b*, the latter being held firmly on an arm sliding on a rigid support. The clamp is compressed sufficiently to prevent the horn slipping out, but not so as to damage the tissues. When the vagina is to be observed it is raised in a similar manner, but care is taken to arrange the vessels which run along the anterior and posterior aspects of it, so that they lie in the space between the jaws, and are not compressed by them. To the further end of the horn or

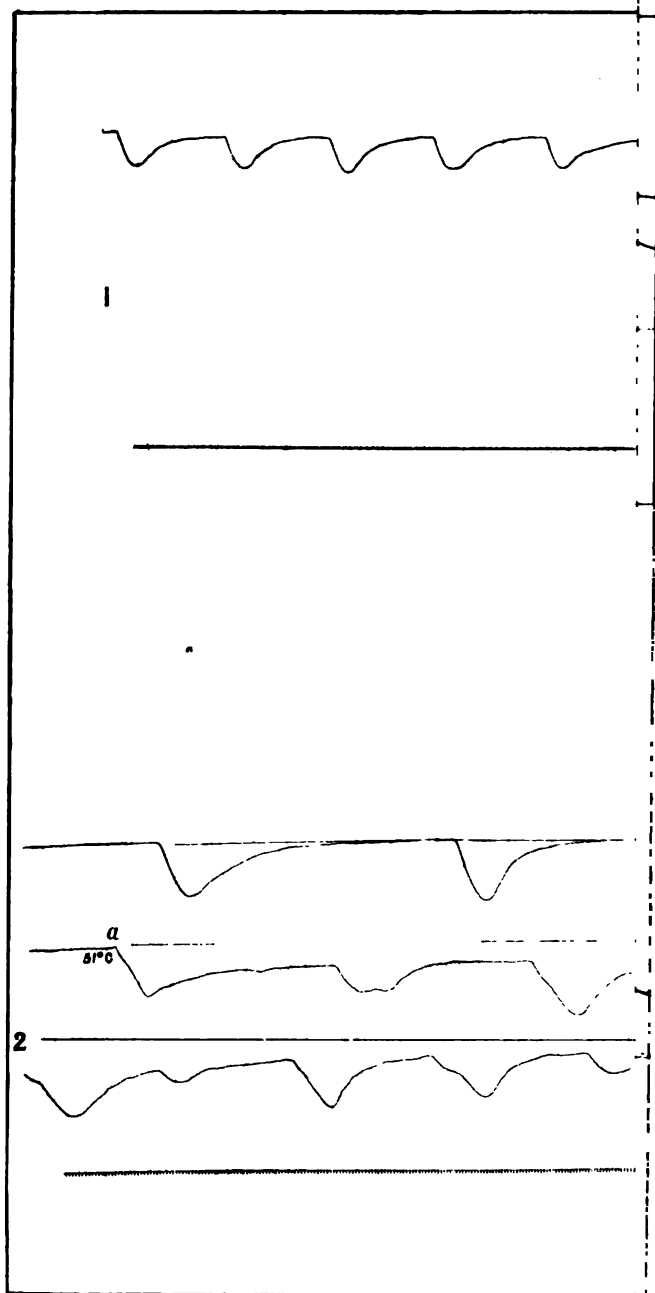
vagina, as the case may be, a fine steel hook, *a*, is passed into the tissue. From this hook a silk thread passes under a pulley, *c*, on the



horizontal rod, *d*, and then to a short lever, *e*, moving in a vertical plane. From this lever a second thread, *f*, passes over another pulley to the lever, *h*, which writes on the drum. It will be seen from this arrangement that any shortening of the segment held between the clamp and the hook will draw upon the latter and so elevate the writing lever, and so long as the parts remain as adjusted, the various movements of the lever will represent a proportional shortening of the segment under observation.

With an arrangement such as this the finest movements of the





uterine muscle in a longitudinal direction are recorded with accuracy. Slight contractions, which will certainly escape the eye of even a trained observer, are demonstrated by the lever, and the perfectly comparative value of the different tracings in a given experiment is not its least recommendation.

The tracing may be taken on smoked or continuous paper. As the drum must move very slowly, the former is the most convenient method, though for any long observation the latter may have its advantages.

When the vagina or uterine horn of a rabbit is arranged as described, evidence is invariably afforded of the existence of regular contractions of the muscular wall, and resulting in rhythmic shortening of the tube. It will be found that the lever describes a series of up and down movements, representing regular contractions and relaxations of the portion of muscular tissue under observation. The rate at which this movement occurs is somewhat variable in different individuals. In young animals it is more rapid than in full-grown individuals.

I show first a tracing, Plate I, Fig. 1, which shows the movement obtained from the vagina of a half-grown animal, in which the rate is at about one contraction in 35 seconds.

In Fig. 2, obtained from the vagina of a full-grown animal, the contractions occur at the rate of one in 115 seconds, as seen in the upper line.

In Fig. 3 A, also from an adult, the movement is at the rate of one in 180 seconds. On an average the rate in the adult may be stated as one in 120 seconds.

In the uterine horn the movements are less extensive than in the vagina, but occur at the same rate, and are always perfectly obvious. They present an important difference in certain respects which I shall have occasion to refer to later on.

The movement as observed by the eye is a distinct peristaltic one. In the vagina, where it is best seen, the contraction begins at the clamp, the tube gradually shortens, while a circular bulging and constriction travels slowly along, the tissue of the segment becoming pale and bloodless.

The movement, if uninterfered with, will go on for hours, its rhythm and extent undergoing little or no change. I have observed it repeatedly for six hours, in one case for nine. It, moreover, continues for a variable period after death, from 30 to 65 minutes. It can be abolished by deep chloroform anæsthesia, but not readily by ether.

The elements going to make up the curves obtained are a matter of some interest, not only on account of the remarkable persistence of their features in different tracings, but also in the case of those obtained from the vagina, on account of the striking resemblance which their component parts bear, at first sight at least, to those obtained from simple contractions of striped muscle.

On examining any of the tracings obtained from the vagina, Figs. 1, 2, or 3, Plate I., it will be seen that each curve consists of three well-defined parts—

1. A period of contraction.
2. " of quick relaxation.
3. " of slow relaxation.

These are particularly distinct in Fig. 3.

The invariable occurrence of these three phases in any curve of contraction shown is worthy of notice. But we must beware of pressing the analogy between the contractions of such an organ as the vagina and that of a portion of striped muscle such as the gastrocnemius of the frog. In this case we are dealing with a tube whose walls are made up of a more or less complex arrangement of non-striped muscular bundles. In the other, we are dealing with a simple muscular element. However interesting may be the fact that the two curves are similar, we are not at liberty to conclude that the mode of action of striped and non-striped muscle is identical. I direct attention to this feature of these records at present in order to enable me the better to point out the more clearly how these movements become modified by the agencies I am about to discuss. A knowledge of the existence and features of these contractions will enable me further to explain what would otherwise seem discrepancies in the result of some of my observations. The question, however, naturally arises here—"Are these rhythmic contractions constantly present in the uninjured vagina and uterus of rabbits, or are they called forth by the operation necessary for their observation, or by the cold air and other influences to which the organ is exposed?"

I have not time at present to enter into a consideration of this question with the detail it demands (nor is it essential for my present purpose), but I beg to submit the following points in support of the view which I hold, that these rhythmic contractions are not the result of adventitious stimuli, but that the whole uterine apparatus of rabbits, and presumably of other animals as well, is the seat of regular rhythmic contractions, independent altogether of pregnancy.

1. The contractions present the same characters in all the animals observed, and in the same individual continue for hours, without any noticeable variation of rate or extent.

2. Variations in temperature of the surrounding atmosphere, and variations in the amount of stretching or compression within wide limits, have no effect on the rate or extent.

3. The contractions continue for many hours where the uterus is returned to the abdomen immediately after the attachment of the hook, and their character is quite similar to those obtained from an exposed uterus.

4. Contractions induced by direct stimuli, thermal and other, differ entirely in many of their features from the natural ones.

5. In this connexion an experiment, which I was enabled to

make, by the kindness of Dr Croom, in the Maternity Hospital last autumn, has a special interest.

A Barnes' bag containing water, but not distended by it, was introduced into the vagina of a pregnant primipara, and the tube attached to a water manometer. Fig. 4, Plate I., shows the result, and gives evidence of a distinct and rhythmic rise and fall of pressure in the vagina.

From these and other considerations I am of opinion that these contractions, representing a regular peristalsis of the whole muscular wall of the uterus and vagina, exist independently of all external stimuli. They are, apparently, examples of automatic action, and are most probably concerned with the nutrition of the muscular apparatus.¹

I have now to consider the results obtained by the application of water at different temperatures to such a portion of uterus or vagina as I have described.

In order to eliminate the effect of the water itself apart from its thermal condition, I made some preliminary observations with pure water at temperatures from 90° to 100° F. It is well known that striped muscle is thrown into a state of rigidity by being immersed in pure water, the condition being known as "water-rigor." Pure water, however, at temperatures varying between 100° F. and 90° F., has no such effect on non-striped muscle. Water at such temperatures, and, indeed, as low as 65° F., produces in some cases no appreciable effect; in others, it seems to diminish the extent of the rhythmic contraction, while having little if any effect on the rate. Nothing of the nature of a prolongation of the contraction was in any way noticeable.

In order to obtain reliable comparative results as to the effects of various temperatures, the water was applied in a definite quantity, as far as possible immediately after the disappearance of one of the rhythmic contractions. In this way the error, arising from the effect being complicated by the occurrence of the natural rhythm, was excluded to a great extent. The fact that the muscle was at the moment of stimulation presumably in a state of partial exhaustion—the result of the preceding contraction—does not vitiate the comparative value of the results. On the contrary, it enhances their interest from a practical point of view, in showing how far the efficacy of the artificial stimuli may be independent of the potential state of the organ for the moment.

The water was applied to the portion of muscle under experiment by means of a glass pipette of 5 c.c. capacity. The pipette was, first of all, immersed in water of the temperature to be employed, then filled, and allowed to discharge on the portion of muscle between the hook and clamp (see woodcut). In the earlier experi-

¹ These movements have been observed and described by Jastreboff, Dembo, v. Basch and Hofmann, and others, but have not, so far as I am aware, been previously recorded in this fashion.

ments the moment of contact of the water and tissue was marked on the drum by an assistant; in the later ones the whole period of application was recorded by means of an electric signal, whose indications are obvious in the tracings.

In describing the effects I shall keep those upon the muscular tissue separate from those on the vascular apparatus, treating of the former first.

A. Effects of direct application of Water at 60° F. and under to Non-striped Muscle.

The results of such an application will be most satisfactorily considered under the following divisions:—

1. The duration of the latent period, *i.e.*, the length of time elapsing between the first contact of water and the first indication of effect.

2. The modification which such effect produces on the elements of a rhythmic contraction.

a. Its period of contraction.

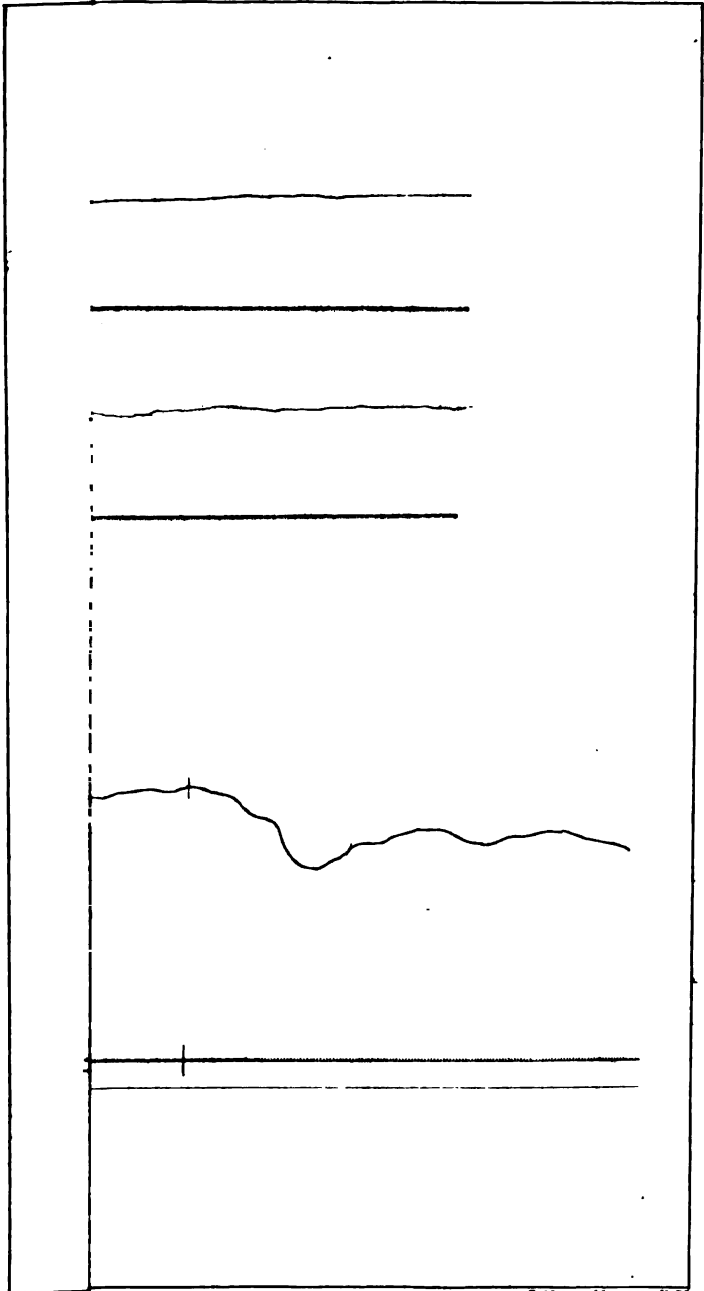
b. Its period of quick relaxation.

c. Its period of slow relaxation.

I shall describe, first, a typical experiment with water taken directly from the tap, the temperature being 42°. The upper line A, Fig. 1, Plate II., shows the result of such an experiment. The X shows the moment of application of the water. It is followed—(1.) By a latent period extending to 30 seconds; (2.) This is succeeded by a period of contraction occupying 25 seconds. On comparing this curve with any of those of the normal contractions already shown, it will be seen that this differs entirely on account of the absence of the quick upstroke¹—in other words, the contraction takes place slowly; (3.) So soon as the contraction reaches its maximum, it will be seen that the curve slowly begins to return to the abscissa. There is no prolongation of the maximal tonus. In this it agrees with the normal curves. But it differs in this important respect, in so far that there is no period of quick relaxation, which I pointed out was a characteristic feature of the normal curves. On the contrary, the curve slowly returns to the abscissa, taking 3 minutes 15 seconds to reach it.

Fig. 2, Plate II., shows the characteristic features distinctly. The first part of the tracing shows the normal rhythm extremely well, the sharp upstroke of the contraction, the quick relaxation period, and the slow after action. The drum was stopped after two contractions for 2 minutes, and the water at 5° C. = 41° F. applied after starting it again. On this occasion it happened to touch the tissue at

¹ The tracings Figs. 1 and 2, Plate I., and Fig 1, Plate II., were obtained by an arrangement in which the thread was attached below the lever, the latter being held up by means of a fine elastic thread. The contraction of the muscle thus produces a *downstroke*, but its meaning is obvious. The arrangement figured in the cut was found more satisfactory, and was adopted for all the other experiments.



the moment when another natural movement was commencing. Consequently the latent period is abolished, and it will be seen that the first part of the curve corresponds in rate and character to that of the two preceding waves. At the horizontal line the slow developing contraction, due to the cold water, manifests itself. It reaches a maximum in 2 minutes 12 seconds, and the abscissa is reached in 7 minutes 35 seconds afterwards.¹

I need not stay to describe more of these in detail.

The features, then, of a single application of cold water under 50° F. to the exposed uterine horn or vagina are as follows:—

1. A latent period of from 40 to 90 seconds.
2. A period of contraction, occupying 1 to 5 minutes in reaching a maximum.

3. A period of relaxation ranging from 3 (nearly) to 15 minutes, generally, indeed, occupying three times the time of the contraction.

Such a series of phenomena has been practically constant in my experience, gathered from a large number of experiments. The only instances in which the latent period has been markedly diminished have been those in which the application of the stimulus coincided with the initiation of a natural rhythmic contraction. Water, which has been cooled by means of ice to 33° or 34° F., produced an almost identical effect. The latent period is reduced to 40 seconds in some, but not in all, cases, and in one or two instances the contraction has been slightly more rapid, but in these cases the period of relaxation has been proportionately shortened.

On the other hand, water between 50° and 60° F. differs in its action only in degree. 1st, There is a lengthening of the latent period; 2nd, The same slow contraction, which is of less extent and shorter duration than with the lower temperatures; 3rd, A relaxation period, which is of the same character as that described, but is proportionately shortened. This much for single applications of water at low temperatures.

¹ It is necessary to explain that, owing to the duration of the contractions produced by these stimuli, the drum frequently completed its revolution before the lever had returned to the abscissa. The duration of the contraction after the revolution of the drum was noted by the following device. At the moment when the drum had completed its revolution, a platinum tongue carried by the drum completed an electric circuit by touching the surface of a mercury cup underneath. The current actuated an electro-magnet, which started a chronoscope capable of recording one-fifth second. At the moment when the contraction disappeared and the lever returned to the abscissa the chronoscope was stopped, and the duration recorded added on to the tracing.

(To be continued.)

VIL.—SYNOPSIS OF A CASE OF CHRONIC POISONING BY BISULPHIDE OF CARBON.

By THOS. H. BRYCE.

(Read before the Medico-Chirurgical Society of Edinburgh, 5th May 1886.)

CASE of J. S., æt. 47, employed in the rubber works in Edinburgh. For two years the patient has been nearly constantly exposed to the fumes of the poison rising from the "curing troughs." After three months of exposure he became very languid and easily tired. He lost all appetite, frequently vomited, and had always more or less nausea. Then, after a month or two, he found himself drowsy in the evening after his work, but sleepless at night, constantly waking up with a start, and frequently dreaming that he was falling over a precipice. He also began to suffer from severe headaches. He became very nervous, and his memory was impaired. His eyes, too, became weak and his vision dim, and more lately he failed to recognise his own wife a few yards off.

About a year ago he began to get thin and weak. He could not walk far without resting frequently, and his back was so weak that he had difficulty in raising himself. He had constant tingling, numbness, and coldness of hands, feet, and legs as far as the knees, and a "wearing" pain in the loins. At night he had "cold shivers," which gave place to profuse perspiration and painful cramps of the toes, and, more lately, of the fingers also.

Eight or ten months ago he began to be troubled with frequency of micturition and occasional emissions, but he never lost sexual desire nor power.

Since the beginning of the year he has suffered from temporary ptosis occasionally, and all the other symptoms have gradually got worse. Early in April he became so weak and prostrate that on one occasion he fell to the ground. He had a violent attack of vomiting and purging, completely broke down, and had to give up his work.

Nervous System.—The headache the patient suffers from comes on when he breathes the vapour, and sometimes lasts for days. It is severe, burning, and darting in character; always on the left side shooting from the back of his head over his forehead and temple. He complains of numbness and coldness of the extremities, which are cold to the touch; also of a tingling, sometimes a pricking, sensation. Sensibility to impressions of touch and pain not much, if at all impaired, but that to thermal impressions impaired in feet and legs as far as knees, and backs of hands as far as a little above the wrists; muscular sense normal.

Sight.—Vision is impaired. He can read only the largest print in a newspaper. Objects are blurred. On going into the light

everything seems to be in a mist. He cannot distinguish the features of a person a few paces off. He can see, if anything, better in the dark. Glasses are little help to him. Dr Argyll Robertson, who kindly examined him, thinks the case may be complicated by tobacco amblyopia. He finds a central blindness to green and red. Fundus and disc normal, but slightly hyperæmic. Incipient peripheral cataract in left eye.

Smell.—Partial anosmia after exposure to the vapour.

Motor functions.—Organic reflexes. Micturition sometimes as frequent as every half-hour. Occasional seminal emissions. Reflexes superficial and deep, normal. No clonus. Muscular system greatly enfeebled. Muscles wasted and flabby. No group specially affected. No tremor nor twitching. Index of dynamometer raised to 70.

No tender point anywhere down the spine, nor is any pain elicited by the hot sponge test.

He is very thin and emaciated, and nearly all the subcutaneous fat has disappeared. He has lost two and a half stones during the last year.

The other systems present nothing further worthy of note.

VIII.—AN OUTBREAK OF CEREBRO-SPINAL FEVER.

By T. J. MACLAGAN, M.D., M.R.C.P., Physician in Ordinary to their Royal Highnesses Prince and Princess Christian of Schleswig-Holstein.

OUTBREAKS of cerebro-spinal fever are so rare in this country that no apology need be offered for publishing the following account of one which came under my notice. It occurred in Dundee in the winter of 1877-78. I was then physician to the hospital of that town, and the cases whose details are given were all under my own care, while the facts and incidents of the outbreak were investigated by myself at the time of their occurrence. Though typhus and typhoid fevers occupy a prominent place in the records of the Dundee Infirmary, cerebro-spinal fever finds no place in them up to the date of the events which I am about to relate. Thirty-four cases were treated in the Hospital. To give details of all would occupy too much space. I content myself, therefore, with giving only a few to illustrate the leading features of the whole.

At 5 Tannadice Street resided P. C., his wife, and seven children. Early in November 1877 P. C. was seized with an illness for which he was treated at home, and during which he was nursed by his wife.

On 30th Nov., while her husband was convalescing, Mrs C. was seized with shivering, headache, and general aching, followed by febrile symptoms. A few days afterwards six of her seven

children were similarly attacked, and on the 8th Dec. they were all sent to hospital. They all suffered from a sharp febrile attack of a fortnight's duration. The symptoms were so much alike in each that one case will illustrate the features of all. There were eight of them altogether treated in hospital.

CASE I.—J. C., aged 17, was seized on 3rd Dec. with shivering, headache, general pains, and sickness. Was admitted to hospital on 8th December.

9th Dec. (7th day of illness).—Did not sleep last night; complains much of intense headache; has febrile aspect; tongue furred; bowels not moved; has a short frequent cough; chest sounds normal; has had some epistaxis; has a sparse eruption on the trunk of bright red spots, not elevated, disappearing on pressure. Temperature in morning 103° , in evening $104^{\circ}1$. To have milk and beef-tea.

10th Dec.—Has anxious expression; is quite intelligent. Had epistaxis three times in last twenty-four hours; bowels not moved; urine, sp. gr. 1031; no albumen. Temperature in morning 104° , evening $103^{\circ}9$. Rash as last noted. To have an aperient.

11th Dec.—Bowels moved by medicine; had considerable epistaxis during the night, and again this morning; temperature in morning $103^{\circ}4$, evening $104^{\circ}2$. To have 3ss. of liquid extract of ergot every three hours.

12th Dec.—Profuse epistaxis again during the night, and recurring during the day; temperature in morning $102^{\circ}4$, evening $105^{\circ}1$; has no eruption; the red spots gone.

13th Dec. (11th day of disease).—Slept well; temperature in morning 104° , evening $103^{\circ}8$; has no rash of any kind; bowels not moved since last action from aperient; repeat it.

14th Dec.—Has heavy listless aspect; sclerotics clear; answers intelligently; bowels moved; no rash; temperature in morning $102^{\circ}8$, evening $103^{\circ}8$; no delirium.

15th Dec.—Fair night; general condition unchanged; no more epistaxis; no eruption on skin; temperature in morning $103^{\circ}6$, in evening $103^{\circ}8$.

16th Dec.—The same; temperature in morning $103^{\circ}2$, in evening 104° ; no stool; repeat aperient.

17th Dec. (15th day of illness).—No rash on skin; temperature in morning $103^{\circ}4$, evening $103^{\circ}2$.

18th Dec.—Temperature in morning $102^{\circ}6$, evening $101^{\circ}9$.

19th Dec.—Temperature in morning $100^{\circ}2$, evening $100^{\circ}2$.

20th Dec. (18th day of illness).—Temperature in morning $98^{\circ}4$, evening $98^{\circ}6$; remained well; discharged on 4th January.

The admission of so many members of one family, all ill at the same time, and all suffering from fever, together with the statement that the father of the family was just recovering from

typhus, naturally led to the supposition that that was the malady with which we had to deal in these cases, a supposition which was strengthened by its evident contagiousness. But when the whole of them were found to enter the second week of their fever without having developed the characteristic rash of that disease, it was evident that typhus was not the disease with which we had to do; for though typhus *sine eruptione* may occur, it is so extremely rare that the absence of the characteristic rash of typhus from all the members of the C. family may be accepted as conclusive evidence that that was not the form of fever from which they suffered. The natural alternative was to regard it as typhoid, for an attack of continued fever of more than a week's duration, which is not typhus, and which simultaneously affects several members of the same family, is, as a rule, almost certainly typhoid. The occurrence of diarrhoea in Mrs C.'s case, and of epistaxis (a common symptom in typhoid) in several of the children, strengthened this view, and for a time they were looked upon as cases of typhoid. But when it was found that in not one of them did the spots characteristic of typhoid appear; that in none of them, except Mrs C. who died, were there any bowel symptoms; and, above all, when it was found that the mean duration of the fever was only fourteen days, it was evident that the cases were wanting in the features essential to the establishment of the diagnosis of typhoid. For though the absence of rose spots, the absence of bowel symptoms, and the absence of the usual third week of the disease, are all quite compatible with the diagnosis of typhoid in a given case, the coincident absence of all these common characteristics of the disease in so many members of one family, all ill at the same time, forms a strong body of evidence, if it is not absolutely conclusive, that they were not suffering from typhoid. But if neither typhus nor typhoid, What was it? There was no local inflammatory lesion to explain the febrile symptoms; there was no reason to suspect malaria; it was not relapsing fever; it was not any of the eruptive fevers; and yet it was evidently contagious. There seemed nothing to fall back on except cerebro-spinal fever. Such was the view to which I leaned, to which, indeed, I was driven by the apparent impossibility of its being anything else; but that disease is so rare in this country, and the course of the C. cases differed so from the conception which I had formed of the disease from what I had read of it, that it was not until other cases occurred, and the true nature of the disease was demonstrated in some of them by post-mortem evidence, that I felt quite satisfied that cerebro-spinal fever was the ailment from which the C. family had suffered.

Simultaneously with their illnesses occurred the following outbreak about a mile from them. At 21 Nelson Street resided a family of the name of M——. The family consisted of the father, aged 54, the mother, aged 49, three unmarried daughters,

aged 25, 21, and 15, and one son, aged 17. A married daughter, Mrs D., with her husband and two children, resided a few doors off, at 27 Nelson Street. Between the M's and D's there was constant intercourse.

For three or four months prior to the illness of his family the father had been working as a labourer in Berwickshire, but came home for a short time during their illness. The eldest daughter, Jessie, resided not with her mother, but in lodgings in another part of the town, half a mile from her mother's house. It was this daughter who was the first to suffer. She began to ail about the middle of October (before the occurrence of the C's cases), and on the 26th of that month was brought to hospital by her mother and married sister, Mrs D., who had both been a good deal with her during the two days immediately preceding her admission. The following are the notes of her case:—

CASE. II.—J. M., aged 25, was brought to hospital on the 26th October. Her friends could give no account of the commencement of her illness, but from the person with whom she lodged I learned that the illness began about a fortnight before admission, and that the early symptoms were shivering, intense headache, weakness, great thirst, and complete loss of appetite; after these symptoms had continued for a week or more she seemed to have some difficulty in speaking, and became very stupid. She had not spoken for two days before admission to hospital. Her mother and sister were sent for after she had been ill about a week, and were a good deal with her during the two days preceding her removal.

26th Oct.—State on admission:—Patient is very dirty; is quite conscious but does not speak; cheeks flushed; eyes suffused; tongue dry; pulse, 108, weak and intermittent; respirations, 48; temperature, 101°; chest normal; no cardiac bruit; no rash on skin; no iliac tenderness or cæcal gurgling; bowels said to have been moved two days ago; swallows with difficulty, and only a teaspoonful of milk or beef-tea at a time. To have beef-tea enemata.

27th Oct.—Quiet night; occasionally passes water in bed; face flushed; eyes suffused; pupils natural; pulse, 100; temperature in morning 100°·8, in evening 102°; urine normal; nothing on skin; to have five grains calomel; the head to be shaved, and a blister 3 × 4 to be applied long enough to redden, but not to blister the surface.

28th Oct.—Quiet night; one natural stool; temperature in morning 100°·6, evening 100°·2; general condition unchanged; tongue dry.

29th Oct.—Slept well; pulse, 108; respirations, 36; temperature, 100°·2 (in evening 100°·6); skin moist; no rash; distinct tache cerebrale; water passed at times in bed, sp. gr. 1035, no albumen.

30th Oct.—Passes water naturally; has no pain; is very thirsty; temperature in morning $99^{\circ}2$, evening $98^{\circ}8$.

1st Nov.—Improved aspect; tongue moistening; bowels moved three times; one stool passed in bed; pulse, 104, of better character; temperature in morning $98^{\circ}8$, evening $98^{\circ}4$.

The patient remained under observation in the hospital till the 4th Jany. 1878, with little or no change in her general condition; the temperature continued normal. On 8th Nov. there was some discharge of blood per vaginam, but no appearance of pain or discomfort; it continued on the 9th, and was supposed to be catamenial; but on the 10th the nurse found a fœtus of about three months in the bed. This made no change in her symptoms or condition, and apparently gave rise to no discomfort. On 16th Nov. it is noted, "Continues in the same listless apathetic state, taking no interest in anything; pulse, 120, of fair strength; chest normal; has no pain; sleeps well; bowels constipated."

From time to time she passed water in bed apparently from sheer apathy. The bowels were generally confined, calling for aperients. She took ordinary diet well, and helped herself. She seemed dull, stupid, and absent; and though she put out her tongue when told, and seemed to understand what was said to her, did not answer. At the beginning of December a slight mattery discharge came from the nose, and continued for two or three days. Treatment consisted locally in the application of blisters and even of a seton. Internally the iodide and bromide of potass, and latterly strychnine were given, but she remained in the same condition, uninfluenced by treatment, and was sent to the poor-house on the 4th Jany.; four days afterwards she was sent from there to the asylum. Dr Rorie, the superintendent, informed me that she suffered from melancholia attonita, a state closely resembling acute dementia, and did not speak for a fortnight after admission. She gradually recovered, and was discharged well on the 14th Sept., nearly nine months after she left hospital.

A year later, on 12th Sept. 1879, she was readmitted to the asylum suffering from puerperal mania, from which she also recovered.

This was a very obscure case. There was no renal disease; she was not at an age at which tubercular mischief is likely to affect the membranes of the brain; there was no history or appearance of syphilis or of accident; and she was not suffering from any of the common specific fevers of this country. That the girl was gravely ill there could be no doubt, and the symptoms all pointed to some form of intra-cranial mischief, evidently of inflammatory origin. Taking the case as an isolated one, and having regard only to what was personal to the patient, no more definite diagnosis could be formed, and none other was formed during her stay in hospital; but regarding it in the light thrown upon it by the subsequent illnesses of the other members of the family, there

can be no doubt that the case was one of cerebro-spinal fever, for we find within a few weeks of her illness eleven cases of that disease occurring in persons who had been directly or indirectly in contact with her.

The contagious nature of her illness not being known, she was placed in a general medical ward, and her friends allowed to visit her. Those who came were her mother and married sister, Mrs D. Jessie M. was admitted on the 26th Oct., and was frequently visited by her mother and sister. Her mother, Mrs M., began to ail on the 19th Nov.; her sister, Mrs D., began to ail on the 11th Dec.; her sister, Margaret M., began to ail on the 20th Dec.; her sister, Mary M., began to ail on the 21st Dec.; her niece, Margaret D., began to ail on the 13th Jan.; her niece, Christina D., began to ail on the 14th Jan. All their illnesses commenced with shivering, headache, and more or less sickness, and all consisted essentially of a febrile attack of about two weeks' duration.

The father, Alex. M., came home on the 31st Dec., and remained with his family, then ill, till the 9th Jan., when he returned to his work at Reston Hill, in Berwickshire. There he was seized on the 19th of Jany., ten days after his return, with shivering, sickness, and headache. He had no medical attendance; but his sister, with whom he resided, and to whom I wrote for information, told me that "he took it with a shaking of cold and a pain in his head, and that the first week he was in bed he threw up everything, even a drink of water." He was confined to bed for a month, and got up for the first time on the 10th of Feby. He remained weak for a long time.

His son, the only one of the M.'s who escaped, left home and went into lodgings when his mother took ill in Nov.

Next door to the D.'s lived James K., his wife, and three children—Elizabeth aged 6, Joseph aged 4, and Charles aged 11 months. The D. and K. children were a great deal together. About the third week in December Elizabeth K. took ill; her symptoms were shivering, sickness, and intense headache, followed by fever, a short cough, and great thirst. She was treated at home, but had no medical attendance; she was in bed for nearly three weeks. About the second week in January her brother Joseph was seized with the same symptoms as his sister,—shivering, sickness, and headache. His mother informed me that Joseph had spots on his skin, but his sister had not. As he seemed worse than his sister, a medical man was sent for, who thought the boy had typhoid fever, and sent him to hospital, where he came under my care. On the 10th February the father, James K., was seized in the same way as his children, and was also sent to hospital. A sister of his, Mary K., aged 22, residing in another part of the town, went to see her brother on several occasions during the days preceding his removal to hospital. She

shivered on the 23rd February, and went through an attack of fever differing in no respect from that from which her brother suffered. She was attended at home by Dr Steel-Moon, by whose courtesy I also saw her several times during her illness. It was a well-marked case of cerebro-spinal fever. Mrs K. escaped.

The three families to which this outbreak was limited consisted of sixteen people,—six M.'s, four D.'s, and six K.'s,—of these twelve suffered and four escaped. The disease did not spread among the neighbours, but was confined to those who were brought into direct and personal contact with previous sufferers. Of the occurrence of the first case, that of Jessie M., no explanation could be given; the other eleven are all traceable back more or less directly to infection derived from her.

CASE III.—Mrs M., aged 49, mother of Case II., brought her to hospital on Oct. 26th, and was a good deal with her on the 24th and 25th Oct., and saw her several times in hospital. On 19th Nov. she was seized with shivering, sickness, and severe headache. On the 20th she took to bed. The sickness and headache continued, febrile symptoms and great prostration followed, and on 27th Nov., the ninth day of her illness, she was brought to hospital.

27th Nov.—Has febrile aspect; is dull and breathes heavily; is very deaf, has been so only since illness, not before; face flushed; eyes suffused; tongue very dirty; pulse, 120, feeble; temperature, $102^{\circ}6$; no eruption on skin.

28th Nov.—Restless night; tongue thickly furred, dry in centre; no rash; has slight cough; chest sounds natural; urine, sp. gr. 1019, albuminous, deposits urates on standing; pulse, 120; temperature, 102° ; evening: pulse, 128; temperature, $102^{\circ}2$. To have milk and beef-tea, and water *ad libitum*.

29th Nov. (11th of disease).—Tongue dirty and dry in centre; is very restless; skin covered with purple spots of different shapes and sizes, not elevated, disappearing on pressure; no other rash; bowels confined; pulse, 132; temperature, $101^{\circ}6$; in evening, 128 and 102° .

30th Nov.—Slept fairly well; spots all gone from skin; tongue moistening; pulse, 120, feeble; temperature, 99° ; to have $\frac{3}{4}$ iv. of wine. Vesp.: pulse, 116; temperature, $100^{\circ}6$.

1st Dec. (13th of disease).—Restless night; is sunk and apathetic; tongue dry; breathes heavily; chest normal; bladder distended, 50 ounces of water drawn off by catheter; urine has trace of albumen; nothing on skin; pulse, 112, feeble; temperature, $97^{\circ}4$; wine to 6 ounces; cup of milk or beef-tea every two hours. Vesp.: pulse, 104; temperature, $99^{\circ}6$.

2nd Dec.—Still requires catheter; urine has trace of albumen, and deposits urates on standing; pulse, 120; temperature, 97° ; in evening, 120 and $99^{\circ}4$.

3rd Dec.—Has had no sleep; is much depressed and sunk;

tongue dry; nothing on skin; pulse, 112, feeble; cardiac systole feeble; temperature, $99^{\circ}6$; still requires catheter; to have champagne frequently. Vesp.: is very restless, tossing arms about; distinct subsultus; pulse, 124; temperature, $99^{\circ}6$; to have 30 grains of chloral with the same quantity of bromide of potass, to be repeated in three hours if required.

4th Dec. (16th day).—Slept after second draught; looks better; tongue dirty; no eruption; pulse, 120; temperature, 100° . bowels confined; requires catheter. Vesp.: pulse, 120; temperature, $98^{\circ}6$.

5th Dec.—Slept all night without draught; is heavy, drowsy, and apathetic; bowels confined; still requires catheter regularly; pulse, 116; temperature, $97^{\circ}6$. Vesp.: pulse, 120; temperature, $97^{\circ}8$.

6th Dec.—Had a good night; expression improved; answers questions; tongue moistening; bowels moved after medicine; requires catheter; pulse, 112; temperature, 98° ; in evening, 116 and $98^{\circ}2$.

7th Dec.—Sleeps well; generally improving; tongue cleaning; pulse, 104; temperature, $97^{\circ}6$; evening, 104 and $98^{\circ}8$.

8th Dec.—Sleeps a great deal; made water for first time without the catheter; tongue clean; pulse, 104; temperature, $97^{\circ}2$; evening, 96 and $97^{\circ}6$.

She steadily gained ground, and was discharged well on 29th Dec.

CASE IV.—Mrs D., aged 27 (daughter of last case), had been much fatigued and upset by attendance on her mother during first week of her illness. She herself began to ail on 12th Dec. Illness commenced with vomiting, and pains all over her, but no rigor. Came to hospital on 17th.

17th Dec. (6th day of disease).—Vesp.: face flushed; eyes slightly suffused; tongue furred; has a rash on the body which cannot be distinctly seen in the evening; pulse, 108; temperature, $104^{\circ}8$.

18th Dec.—Slept badly; complains of intense headache; face flushed; pupils natural; tongue moist; the face, arms, and to a less extent the trunk and thighs, are studded over with an eruption of light red spots (rose-coloured), not elevated, disappearing on pressure, and of no regular shape; pulse, 104; temperature, $104^{\circ}8$. Vesp.: pulse, 104; temperature, 105° . Patient is quite intelligent; both she and the nurse say that the spots on arms and legs come and go; they were very numerous in the afternoon on the arm, and each about the size of a pea. Complains a good deal of pain all over; both muscles and skin are hyperæsthetic; can lie only on her back, she feels so aching and sore when on her side.

19th Dec.—Slept a little during night; cheeks more deeply flushed; has anxious expression and very distressed aspect, but

says she has less pain; no sickness; no tenderness of neck or spine; is very restless; the same rosy-red rash on trunk, arms, and thighs; has troublesome cough; chest sounds normal; bowels confined; to have aperient, and 30 grains of bromide of potass three times a day. Morning: pulse, 104; respirations, 42; temperature, 104°·3. Evening: pulse, 100; respirations, 40; temperature, 104°·8.

20th Dec.—Restless night; not wandering; bowels moved; has had slight epistaxis. Seems oppressed and heavy, but intellect is quite clear; eyes natural; cough is more troublesome, and there is a scanty viscid colourless expectoration; percussion and auscultation natural; rash less distinct; urine contains trace of albumen; pulse, 108; respiration, 42; temperature, 103°·2. Vesp.: pulse, 104; respiration, 48; temperature, 103°·8; cough very troublesome; rash brighter, in vivid red spots. To have 20 mm. of Tr. Camph. Co. every four hours.

21st Dec.—Slept from time to time, but coughed a great deal during the night. Is quite intelligent; has anxious and distressed expression; dusky flushing of face; tongue and lips dry. Says she is "sore all over," and everywhere is preternaturally sensitive to touch; says "she hasn't breath;" breathing short and frequent, the air cells being apparently only partially filled; percussion and auscultation show nothing abnormal; heart sounds normal; pulse, 112; respirations, 60; temperature, 103°·2. To have ice cap to head, and 30 grains of chloral at once, and a second dose in three hours if required. Vesp.: slept for an hour and a half after second dose of chloral; cough is less troublesome; has pains in body, but none in head; still complains of having no breath; pulse, 112; respirations, 72; temperature, 103°·8. To have chloral and bromide draught.

22nd Dec. (11th of illness).—Slept better; tongue moist; cheeks flushed; pupils natural; has less cough; no pain; rash fading; pulse, 112; respirations, 64; temperature, 102°·5. Vesp.: pulse, 112; respirations, 60; temperature, 104°·1.

23rd Dec.—Slept well after draught containing 30 grains of chloral and the same quantity of bromide of potass; is quieter and quite sensible; coughs less; rash nearly gone; tongue dry; no stool; complains of sore throat; pulse, 108, of better character; respirations irregular, about 60; temperature, 103°. Evening: pulse, 104; respirations, 60; temperature, 104°·2.

24th Dec.—Slept well, face less flushed; tongue moist; throat better; one natural stool; feels all sore, but has no localized pain; rash is now only a faint livid mottling; pulse, 108; respirations, 60; temperature, 103°. Vesp.: pulse, 108; respirations, 60; temperature, 103°·8.

25th Dec. (14th of illness).—Quiet night; feels very wretched, but has no pain; tongue dry; rash all gone; pulse, 104; respirations, 40; temperature, 101°·8. Vesp.: pulse, 104; respiration, 52; temperature, 103°·1.

26th Dec.—Passed a quiet night; urine contains trace of albumen; pulse, 108; respirations, 48; temperature, $100^{\circ}4$. Vesp.: pulse, 104; respirations, 48; temperature, $101^{\circ}6$.

27th Dec.—Sleeps a great deal; urine normal; tongue moist; pulse, 104; respirations, 40; temperature, $99^{\circ}8$. Vesp.: pulse, 104; respirations, 44; temperature, $101^{\circ}2$.

28th Dec.—Continues to improve; sleeps well; pulse, 100; respirations, 36; temperature, $99^{\circ}6$. Vesp.: pulse, 104; respirations, 38; temperature, $99^{\circ}5$.

29th Dec.—Pulse, 104; respiration, 36; temperature, $98^{\circ}6$. Vesp.: pulse, 92; respiration, 36; temperature, $99^{\circ}8$.

30th Dec.—Pulse, 96; respirations, 32; temperature, $98^{\circ}8$. Vesp.: pulse, 92; respiration, 34; temperature, $98^{\circ}4$.

31st Dec.—Pulse, 92; respiration, 32; temperature, $98^{\circ}4$.
Convalesced steadily, and made a good recovery.

(To be continued.)

Part Second.

REVIEWS.

The Nature of Mind and Human Automatism. By MORTON PRINCE, M.D. Philadelphia: 1885.

THIS book is a vindication of materialism, a very old subject, to which Dr Prince gives an appearance of novelty by freely quoting writers who air their views in the popular monthlies of the day. Old foes with new faces, not any the more terrible on that account. Dr Prince tells us the work was originally written as a thesis. At that time it is likely he was content to use the thoughts of others to help him across difficult places. Now that he has shown a certain capacity for independent thinking, it strikes us as somewhat strange that he should cite Huxley as "an authority" in psychology. Then, of course, Tyndall appears lower down, for we notice in books of this kind that Tyndall and Huxley always come together as surely as Bavius and Mavius. On questions of heat or light we are content to have Tyndall as an authority, and should prefer consulting Huxley about the anatomy of the rattle-snake, to getting a rattle-snake to dissect ourselves; but on such questions as materialism based on grounds and arguments open to all we shall have no authority, not even the Pope. This is, however, more an error of form than reality in the book, for though he does take up time needlessly to discuss such questions, as whether animals are automata, or the existence of Maudsley's mentiferous ether, Dr Prince has got an original turn, at

least of expression, and has surpassed many of his materialistic authorities in closeness of reasoning.

We do not like writing an unfavourable verdict on a book without assigning some reasons, but any praise we could give as to its style and arrangements would be of little value, while treating the main argument as wrong. But unless we were to write an article of twenty pages, for which we conceive the editor has no room, we must content ourselves with a few remarks. To judge from the table of contents, one would think that a great many riddles would be read, but when we turn to the pages indicated we only meet with thoughts which we have seen elsewhere, though often stated with a certain adroitness. We turn, for example, to the page where we are to learn the grounds for believing consciousness to be dependent upon molecular motions in the brain; but instead of hearing what the grounds are, we have simply a repetition of the assertion that every state of consciousness is accompanied by a molecular change in the substance of the brain, and for proof of this we are told that this "has been accepted on all sides by spiritualists and materialists alike." Yes, but do these molecular changes precede or follow consciousness, or simply accompany them? and of what kind are they? Does the materialist not believe that these changes really constitute consciousness, and here the difficulty immediately appears. Consciousness, feeling, thought, will, are all caused by certain molecules approaching and receding from one another! Here we may cite two passages which Dr Prince considers of such value that he gives them in altered type to catch the reader's attention. "A mental and those physical changes which are known in the objective world as neural undulations are one and the same thing, but the former is the actuality, the latter a mode by which it is presented to the consciousness of a second person, *i.e.*, to the non-possessor of it."

Then again, "Physical changes occurring in a foreign body, as a piece of iron, though giving us our experience of it, must be absolutely unknown to us. Physical changes occurring in our brains are clearly known to us; they are our thoughts, our sensations, and our emotions." Physical changes, in fact, are mental changes, and as, save as mental changes, they are absolutely unknown to us, by assuming that mental changes alone exist, we solve the whole difficulty. Thus, instead of vindicating materialism, Dr Prince vindicates idealism.

In the second part of the book, "On Human Automatism," the author discusses the reflex character of ideas, consciousness as an agent in the determination of bodily action and self-determination. These seem to us the most judicious chapters in the book, while the concluding one, "What is Materialism?" is the weakest. It is full of statements such as that the tribes of Oceania and Australia "cannot possess any abstract notion of a tree or any other object of quality," and that the Sioux "regards most of the vices as virtues."

He objects to moralists of the theological school, that people have been taught to act honestly and uprightly in order that they may be afterwards rewarded, and warned against immorality by the fear of future punishment. He considers the code of materialism much preferable, in which, instead of being reminded of reward and punishment, we are told to act uprightly for the common benefit of humanity, not for the sake of benefiting ourselves alone. He does not tell us *why* a materialist should be educated to regard the good of the many as a preferable object to his own good and happiness. He ends by the somewhat unguarded admission that "theological ethics is that best suited for the control of man as he now exists." In that case, of course, theological ethics are really the best.

A Contribution to the Study of Diseases of the Circulatory System in the Insane. By T. DUNCAN GREENLEES, M.B. Edin.
(Reprinted from *The Journal of Mental Science*, Oct. 1885.)

DR J. A. CAMPBELL has reason to be proud of the excellent work done at Garlands. Not only is the ordinary business of the Asylum conducted in a most creditable way, but he and his assistants devote their spare time to elaborating important contributions to the literature of insanity. In 1884 Dr Rutherford Macphail gained the medal of the Medico-Psychological Association for his *Clinical Observations on the Blood of the Insane*, and now we have from the junior medical officer, Mr T. Duncan Greenlees, an important study of the prevalence of diseases of the heart and vessels in insane patients. He found that heart disease occurs with greater frequency among the insane than among the sane. He observes that the inmates of the Garlands Asylum who exhibit the physical signs of heart disease "are generally morose, suspicious, or passionate, and cases of profound melancholia are liable to outbursts of temper. The connexion between the delusions of the insane and the presence of organic visceral disease is an interesting study, and the irregular action of the heart in many cases gives rise to strange delusions, such as the workings of an unseen agency, as electricity, within them."

In those cases of feeble circulation with cold extremities, so common in asylums, heart disease was not found to be common. It seems to be rather associated with derangement of the systemic circulation.

Mr Greenlees gives a table representing the pathological changes in the heart and vessels in 222 post-mortem examinations. He found that arterial disease is very common in the insane, especially in general paralysis, and has observed some cases in which disease of the heart and circulatory system were the only ascertained predisposing cause of the mental aberration.

The whole article is full of information, and we should much like to see more work of the kind done in our lunatic asylums, where there is a wide field for study both in pathology and therapeutics.

Vorlesungen über Pharmakologie für Ärzte und Studierende. Von Dr C. BINZ, ordentlicher Professor und Geheimer Medicinal-Rat, Director des pharmakologischen Instituts der Universität Bonn. III. Abteilung. Berlin: 1886: Verlag von August Hirschwald.

THIS third part brings the work of Professor Binz to a conclusion, and we would heartily congratulate him on the completion of his task.

The section before us includes the consideration of bismuth, lead, silver, gold, and mercury—the antiseptics, antipyretics, acids, and oils—emetics, purgatives, and anthelmintics, as well as remedies for external use. In the discussion of all these, the author brings to his aid not only a perfect acquaintance with the most recent investigations, as, for example, those of Steinfeld on the action of Bismuth, published last year, but also a great store of antiquarian knowledge regarding the uses of drugs in the past, such as the employment of the bark of the willow in long bygone times. The result is that while the work is quite abreast of the age, it does not forget to acknowledge that we owe a debt to those into whose labours we have entered.

The work will be one of the most useful treatises on therapeutics for the physician, and the excellent index of authors and subjects adds largely to the value of the volume. We hope it will be largely read in this country, as it is certain to be in its "Fatherland" and in America.

The Student's Guide to the Practice of Medicine. By M. CHARTERIS, M.D., Professor of Therapeutics and Materia Medica, Glasgow University. Fourth Edition. London: J. & A. Churchill: 1885.

THE appearance of a fourth edition of this work is the best testimony in its favour. The present edition has been made much more useful by the addition of some new matter, and it may be recommended with confidence to those for whom it is intended.

Nouveau Manuel de la Garde-Malade à l'Usage des Mères de Famille, des Institutrices, des Infirmières, etc. Par le Docteur EDGAR BÉRILLON, Paris, 1885.

IN 1884 Dr Bérillon was a member of a medical mission which was sent from Paris by the Minister of the Interior to visit the

districts in the South of France ravaged by the epidemic of cholera. His observations showed him how much harm results from the ignorance and carelessness of the people in everything relating to the art of nursing the sick, and the ready credulity with which they accept the misleading advice of pretenders. This little book, containing about 150 pages, is intended to give directions to housewives how to treat slight derangements of health, or what to do in cases of accident or severe diseases before they had time to procure a physician. The author is very careful that his advice should not engender over confidence on the part of the mother of the family. On the other hand, from some of the directions, it is evident he estimates pretty highly the intelligence and foresight of French housewives. In the third part of the book we have a list of the medicinal plants which the mistress of the house should have by her, such as violet, fumitory, mallow, tussilago, camomile, peppermint, valerian, gentian, absinthe, and tansy. "If she lives in the country," he naively observes, "nothing will be more easy than to collect in the course of her walks the plants which grow wild in abundance round about her abode." Directions are given at what seasons to collect these simples, and how to prepare them. There is also a list of liquid medicines, such as liquor ammoniæ, sulphuric ether, laudanum, and tincture of the perchloride of iron, which the mother of the family is to have in store. She is encouraged to put on cupping glasses, but dissuaded from using leeches unless recommended by a physician.

The chapters on the precautions to be taken against contagious diseases are written with much thought and judgment. Altogether the book is a useful one, written with great care and in a plain style. At the same time, the mental qualities and knowledge of the author are so high that we should rather advise him to go on working steadily for the scientific world, than to try to write for an ignorant public like that of the south, where knowledge is apt to remain traditional rather than to become literary.

Materia Medica and Therapeutics: Vegetable Kingdom, Organic Compounds, Animal Kingdom. By CHARLES D. T. PHILLIPS, M.D., F.R.S.E., M.R.C.P. Lond., etc., late Lecturer on Materia Medica and Therapeutics at the Westminster Hospital Medical School. London: J. & A. Churchill: 1886.

A FEW years ago it was our privilege to review most favourably Dr Phillips' first volume on "Inorganic Substances," and we are happy to be in a position to speak equally favourably of this second volume, which completes the work. Dr Phillips has undoubtedly rendered valuable service to this important department

of medical science by the publication of this work on *Materia Medica*. The arrangement of the book is excellent, the style is clear and succinct, and the therapeutical actions of the various drugs are fully and accurately described. With regard to the vegetable kingdom, the chief properties of each of the officinal Natural Orders are given, and also a full description of the botanical characters of the various officinal plants, in so far as these are required for the medical student or practitioner.

The work shows extensive reading on the part of its author; and what is even more important, that he has well digested what he has read. The book is not one which can well be regarded as a text-book for students, especially in the present day, when so much is required of the student in his professional examinations. The volume before us contains (including the *Index*) 1081 pages, whereas the first volume on "Inorganic Substances" contains 820 pages, thus rendering the work far too large for a student's class text-book. It is a work, however, which should be in the library of every practitioner. As a work of reference, it has few equals and no superior in our language. It includes not only the officinal drugs of the new Pharmacopœia of 1885, but all the more important new medicines, such as fuchsin, resorcin, paraldehyd, the iodide and bromide of ethyl, kairin, antipyrin, ingluvin, and all the more important unofficinal substances derived from the vegetable kingdom.

The Medical Digest, or Busy Practitioner's Vade-Mecum. By RICHARD NEALE, M.D. Lond. London: Ledger, Smith, & Co.: 1886.

WE have much pleasure in drawing the attention of our readers to the issue of the *Digest* and its First Appendix. The first edition of the work was published by the New Sydenham Society in 1877. The second appeared five years later, in 1882; and now we have an edition published with an appendix containing a digest of subjects that have been discussed in the more important medical journals during the last four years. The labour involved in bringing out the first two editions was very great, and in the present Dr Neale has not spared himself, inasmuch as he has drawn up for the appendix alone an index that contains more than 3000 entries, all of them referring to subjects that were not included in the 1882 edition. The work is unique. It is invaluable to the writer, the student, and the busy practitioner alike. It merits all the good things (and a great deal more) that have been said of it, and Dr Neale most thoroughly deserves the practical encouragement which every member of the profession can give by becoming possessed of it.

Micro-Organisms and Disease: an Introduction into the Study of Specific Micro-Organisms. By E. KLEIN, M.D., F.R.S., etc. London: Macmillan & Co.: 1886.

THIS handy volume was reviewed March 1885 in this journal, and this is now the third edition, which shows more thoroughly than a favourable review that it is held in high estimation and read by many. This edition has received a goodly number of alterations and additions, the engravings mounting from 108 to 121, and the pages from 190 to 263; this increase of size has been brought about partly by larger print, but more by new matter. The methods of preparing nutritive media have in some cases been simplified, and in others described more in detail, and additions have been made to the methods of staining. Klein still adheres to the Cohn classification of sphæro-bacteria, micro-bacteria, desmo-bacteria, and spiro-bacteria, and really it is well that he should do so, for an entirely correct, all embracing system, into which every bacterium should remorselessly be fitted and placed, is apparently as far off as ever, and must be preceded by, and a deduction from a much more accurate knowledge than any one yet possesses of the modes of origin and development of those minute organisms. The author's chapters on the relations of septic to pathogenic organisms, the vital phenomena of pathogenic organisms, and on vaccination and immunity, are well worthy of and will repay careful study. The volume, although not illustrated with any of the coloured drawings which adorn some bacteriological works, deserves all the success which it evidently has obtained, and it may be safely predicted that an equal amount of favour will be bestowed on this third edition as has been accorded to the others.

An Introduction to Practical Bacteriology: Based on the Methods of Koch. By EDGAR M. CROOKSHANK, M.B. Lond., F.R.M.S., Demonstrator of Physiology, King's College, London. Illustrated with Coloured Plates and Wood Engravings. London: H. K. Lewis: 1886.

PEOPLE are beginning to be less sceptical about the pathogenic properties of many micro-organisms, and to have a glimmering that the facts observed and inferences deduced by competent observers cannot be set aside or slighted: the investigation of their life-history becomes, therefore, a matter of great moment, and one deserving deep attention and study. The progress of bacteriology is indicated by the existing, extensive, and almost daily increasing literature of the subject, some of it meritorious, some of it also confusing and obscure. Dr Crookshank's book supplies

the want, in our language, of a work taking a general survey of the subject, and with much minuteness of detail, as is fitting in a handbook for laboratory purposes. He faithfully follows and reproduces the methods of Koch as practised in the Berlin Gesundheitsamt. The apparatus, material, and reagents employed in a bacteriological laboratory are carefully described and figured, and directions for preparing nutrient media and the methods of cultivation are given with an amplitude of narration which leaves nothing to be desired. The second part is systematic and descriptive, giving a history of our knowledge of bacteria from Leeuwenhock down to the present day. Dr Crookshank has provisionally adopted the classification of Zopf, not because he believes in pleomorphism, but because he thinks the arrangement handy for disposing the micro-organisms for ready reference. This classification consists of four groups: Coccaceæ, possessing only cocci or thread forms resulting from their juxtaposition; Bacteriaceæ, possessing mostly rods and thread forms; Leptothrichææ, thread and rod forms which show a distinction between base and apex; Cladothrichææ, possessing thread forms with false branchings and spirals. Then follows a chapter on other fission-fungi which have been mentioned or described by other writers, and not recognised in the classification of Zopf. Appendices on yeast and mould fungi, on examination of air, soil, and water, and a rather brief bibliography, complete a volume which is decidedly the best and most comprehensive that has appeared in English. It is profusely illustrated, and the coloured plates of microscopic preparations are very beautiful; and the work, as a whole, is worthy of the highest commendation, and is sure to find an extensive field of usefulness.

L'Ottalmologia in Quadri Sinottici da Servire Come Guida ai Pratici ed agli Studenti DEL DOTTOR. L. MANCHÉ, Chirurgo del Reggimento di Artiglieria Maltese, Docente di Ottalmologia nell' Università di Malta. Malta: A Puglisevich, Valletta: 1885.

THE object of this work becomes apparent at a glance. It is in the large atlas form, but without any plates. When opened, the tables, which stretch from the one page to the other, present a length of 27 with a breadth of 20 inches. At the head of the page is given the causes, the symptoms, and the treatment of the diseases. The names of the diseases themselves are given in a column on the left side. Thus, when the eye runs down the table, it finds the causation, symptoms, and treatment of all the diseases, each in its row. When it follows the line from left to right it successively runs over the causation, symptoms, and treatment of any particular disease mentioned. The advantage of this

method is that one can find what he is in search of at a single glance. There is no cause for perplexity, nor loss of time in turning over pages. The author trusts to the clearness of his arrangement and the conciseness of his definitions. In the completeness of the tabular arrangements there is a certain mnemonic power. A work of this kind is especially useful for rapid consultation, and for preparation for an examination.

There are nineteen tables in all. The two first are devoted to a recapitulation of capital points in the anatomy of the eye, and the third to the physiology of the organ. In the fourth table we have a series of useful directions how to make an examination of the different parts of the eye and its appendages with a view to diagnosis, what manœuvres to make, and what instruments to use. The remaining fifteen tables are given to the different diseases of the eye and orbit.

Nothing but a mature practical acquaintance with the subject could have given to Dr Manché's work such a well-chosen selection of facts, and such a clearness of definition. His views on debated points are seldom of an undecided character, showing that he does not shun difficult questions, but has tried to come to an independent view through thought and observation. Well versed in the literature of the subject, he has neglected no sources of information. Altogether the work is a useful addition to the medical literature of a country which has furnished the classical treatise of Scarpa on *Diseases of the Eye*. Copies of Dr Manché's book, which costs 15 lire, may be procured through H. K. Lewis, London. We hope yet to see an English translation of it.

The Optical Manual. By Surgeon-General T. LONGMORE, C.B.
Third Edition. 1885.

THIS book, which professes to be a "handbook of instructions for the guidance of surgeons in taking the range and quality of vision of recruits and others seeking employment in the military services of Great Britain, and in distinguishing and dealing with optical defects among the officers and men already engaged in them," is not only the cheapest, but in many respects the best book on refraction in the English language. It is fairly exhaustive and accurate, and treats of the subject from a practical point of view. The chapters more especially referring to the testing of visual acuity for the army are excellent, and contain much useful information which is not to be found elsewhere. The author is to a great extent the originator of the present system of examination in this country, and has given a short account of the systems adopted in other countries as well.

A Manual of Operative Surgery. By LEWIS A. STIMSON, B.A., M.D., Surgeon to the Presbyterian and Bellevue Hospitals, New York. Second Edition. With 342 Illustrations, pp. 498. London: H. K. Lewis, 136 Gower Street: 1886.

AMONG a number of recent publications on operative surgery, Dr Stimson's work stands out prominently as among the best. The range of subjects is very complete, the style is terse and clear, and the illustrations are at once artistic and expressive.

Part I. describes "The Accessories of an Operation." A short practical account is given of anæsthetics, local and general, of arrest of hæmorrhage, of antiseptic treatment of wounds, of sutures, and of bandages.

Part II. treats of Ligature of Arteries. The general points to be attended to in the ligature of an artery are clearly laid down step by step. The author is evidently writing as if he were in the operating theatre. His anatomy is accurate, but it is not the mere anatomy of the dissecting-room. In the absence of muscular contraction and of the circulation of the blood, the description of mere dissecting-room operations falls far short of what is required for real work. By avoiding this common error, Dr Stimson has added much to the value of his book. Each artery which is commonly ligatured is discussed under the heads of its anatomy and mode of exposure for ligature. In the case of the more important vessels a few brief notes of the general surgical bearings of the operation are added. Although the descriptions include those of vessels seldom tied in the living body, the same vivid style is maintained throughout.

Part III. deals with Amputation. Here accurate descriptions are given of the best methods of operating at the various parts of the limbs. Syme's amputation at the ankle, and Spence's at the shoulder, are described in their own words, and similar care is taken with the work of other surgeons. We should like, however, to have seen Fourneau-Jordan's operation better described. Neither his nor any other name is associated with the rather meagre sketch of the "Modified Oval Method" of amputating at the hip-joint.

Part IV., on "Incisions of Joints and Bones," includes a section on Trephining, with an account of the topographical position of the fissure of Rolando. Like the rest this part is extremely good.

Part V. is headed Neurotomy and Tenotomy. So far as this division fulfils its title in describing the section of nerves and tendons we have little to say except in its praise. We would have expected also some account of nerve stretching under this head, but find that it has been omitted. The removal of Meckel's ganglion has been performed by Chavasse and others in this country, and might have been included among operations on nerves.

Part VI. is a very complete account of the chief "Plastic Operations on the Face," including those on the lips, nose, and eyelids.

Part VII. treats of special operations, and is divided into nine chapters. The first and second deal respectively with the eye and ear and their appendages. Chapter III. is upon "Operations upon the Mouth." Here, besides others, Whitehead's method of excising the tongue with scissors is well described, but is not associated with any name. Under "Operations performed upon the Neck," in Chapter IV., we miss two that we expected to find, although they are not often performed, *i.e.*, removal of the thyroid gland when enlarged, and excision of the larynx. Chapter V. treats of "Operations performed on the Thorax" not included in previous chapters. In a full and satisfactory account of "Operations performed upon the Abdominal Wall, Stomach, and Intestines," Chapter VI., the somewhat rare operation of resection of the intestine is omitted, but otherwise nothing is left to be desired.

Chapters VII. and VIII. treat of operations on the Male and on the Female Genito-urinary Organs. While Chapter IX. embraces some "Miscellaneous Operations," such as "Splenotomy, and removal of the Kidney, and Osteotomy." In an otherwise excellent chapter we miss an account of nephro-lithotomy, and of M'Ewan's method of osteotomy.

Where there is so much that is admirable it seems hardly fair to have drawn attention to comparatively trifling omissions, were it not that we hope to see the value of the work enhanced by their presence in subsequent editions. We have the greatest confidence in recommending this work.

A Manual of Operative Surgery. By W. ARBUTHNOT LANE, M.B., M.S., F.R.C.S., Senior Demonstrator of Anatomy, Guy's Hospital; Assistant Surgeon to the Hospital for Sick Children. Pp. 272. London: George Bell & Sons, York Street, Covent Garden: 1886.

THE distinguishing character of this book is the minute description of the various structures divided in any of the operations. For students who are reading for an examination this will doubtless prove of much service, but for the practitioner such enumeration of details will be rather confusing than otherwise. It is of comparatively small importance for a surgeon in operating to think of every twig of nerve or vein that he severs. Rather should he concentrate his attention on the best ways of stopping the hæmorrhage, and on the most rapid and yet accurate way of finishing what he has undertaken. In other particulars the work is excellent. There are seventeen sections in all, embracing amputations, excisions, and ligature of arteries; excision of organs, such as the tongue, eyeballs, larynx, etc.; divisions of muscles, tendons,

and bones; operations for hare lip and cleft palate; operations on respiratory apparatus; operations on the intestinal tract, on the urinary tract, on the brain and nerves, and on the eye. The book is evidently the result of careful work, and is brought up to the latest date. The drawings given are mostly in outline, but they are clear, and serve their purpose well. For students preparing for examination Mr Lane's book will be of especial value.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LXV.—MEETING VIII.

Wednesday, 7th April 1886.—Dr BATTY TUKE, *Vice-President, in the Chair.*

I. ELECTION OF MEMBERS.

J. Hogarth Pringle, M.B., C.M., Edin.; N. T. Brewis, M.B., C.M., Edin.; J. Batty Tuke, jr., M.B., Murrayfield, were elected Ordinary Members of the Society.

II. EXHIBITION OF PATIENT.

Mr A. G. Miller showed a case demonstrating recovery from WHITE SWELLING of the KNEE-JOINT of a severe type. The patient, a boy, had been under his care twice for this affection, and on each occasion had recovered. The treatment at first was the application of Scott's dressing and elastic pressure. On the last occasion on which he returned the joint was so far gone and the ligaments affected to such an extent that amputation was recommended, but declined. In its place the actual cautery was applied. When the slough came away excessive hæmorrhage occurred, and continued for about a fortnight. It turned out that the boy was a bleeder, and it was therefore fortunate that amputation had not been performed. The recovery of the joint was as perfect as anything he had ever seen, all the movements being quite restored.

III. EXHIBITION OF PATHOLOGICAL SPECIMENS.

1. *Mr A. G. Miller* showed TWO KNEE-JOINTS from cases of amputation done for white swelling.

2. *Dr McBride* showed ADENOID GROWTHS removed from the naso-pharynx of a young lady aged 15, who suffered from the ordinary symptoms of obstructed nasal respiration and difficulty in deglutition, all of which were relieved by the operation.

3. *Dr Littlejohn* showed a PREPARATION exhibiting the effects of fire on the skin in a case in which death was brought about by burning. It illustrated the "cleft," which occurred so often in those cases, and which was liable to be mistaken for wounding from some sharp instrument. A simple inspection of the wound showed that it was really due to the skin giving way when scorched.

4. *Dr Allan Jamieson* showed a WARTY GROWTH from the front of the proximal phalanx of the left forefinger, sent home from the Punjaub by Dr Hutchinson. The origin of it was the pricking of the skin by a species of grass, which caused a similar growth on the foot.

5. *Dr James Carmichael* exhibited a RACHITIC SPLEEN, weighing $2\frac{1}{2}$ ounces, measuring $3\frac{1}{2}$ inches in the long diameter, 2 inches transversely. The child, a little boy 19 months old, was admitted into the Royal Hospital for Sick Children about five months ago, and died last week. He was brought to hospital on account of vomiting and diarrhoea. On examination it was found that he was rachitic, and the spleen was considerably enlarged, measuring over $6\frac{1}{2}$ inches vertically. It could readily be felt by palpation, extending forwards close to the vertical line of the umbilicus, and downwards as far as the iliac crest. The condition of the spleen was diagnosed as one of simple hypertrophy. Chronic enlargements of the spleen were not uncommon in children, and one of the most frequent causes was a simple hyperplasia. This was generally met with in rachitic or syphilitic children. The reason he had brought this spleen to exhibit to the Society was to demonstrate the frequency with which alterations in size of the organ take place in these circumstances. The spleen sometimes enlarges very quickly, and often diminishes in size with equal rapidity. Two months after this child had been in hospital the vertical splenic dulness measured only 4 inches. A month before he died it measured only about 3 inches. The present measurement was, as already stated, about the same. The probable weight of the organ on admission would be about 6 ounces, the average normal weight of the spleen at this age being $\frac{1}{2}$ an ounce. The organ was somewhat hard, the capsule thickened; there was no waxy reaction with iodine.

6. *Dr Cotterill* showed two specimens of EPITHELIOMA of the RECTUM. The first of these was removed for recurrence two and a half years after operation. In all at least 7 inches of rectum must have been removed from this patient by the two operations. The second case had not been operated on previously. Both patients had made good recoveries. He thought the operation should be done more frequently than it was. By keeping the sphincter attached to the skin, stitching to it the stump of rectum, and

draining the cavities made in the ischio-rectal fossæ, an exceedingly good result was got.

IV. EXHIBITION OF INSTRUMENTS.

Dr Foulis showed (a) a continuous SYRINGE for washing out the ears; (b) A FORCE PUMP attached to his aseptic catheter to obviate the necessity for a siphon action.

V. ORIGINAL COMMUNICATIONS.

1. *Drs Mackenzie Johnston* and *Cotterill* read papers on A CASE OF INTRA-TRACHEAL TUMOUR, which appeared at p. 1108, vol. xxxi. of this Journal.

Dr M'Bride said the subject of tracheal tumours had been so well discussed in this paper that he could do little more than congratulate the authors. *Dr Johnston* had raised an important point in connexion with the wide opening of the glottic chink, which he thought he had observed in other cases of dyspnœa, and suggested that it might be due to increased action of the abductors. He (*Dr M'Bride*) must, however, say he had seen a number of cases in which there was dyspnœa, and not more opening than usual of the glottic chink. He should like to ask if a microscopic section had been made, because if not it would be very difficult to say whether the tumour was a papilloma, a fibroma, or polypoid.

Dr Duncan said that from *Dr Cotterill's* description one gathered that the upper opening into the trachea was made simply on account of the dyspnœa which prevailed at the time of the operation, in consequence of vomited matter having gone down the trachea. He was rather inclined to differ from *Dr Cotterill* as to the necessity for two openings in such cases. The upper opening in this instance was called for by the accidental conditions of the case. But why two openings should be made if one would do he did not see. If the position of the tumour could be diagnosed, why should not one opening below it suffice to remove the tumour and insert the tube?

Dr Foulis said that from time to time one saw tumours brought before the Society and spoiled, as this one was, by being kept in spirits. They were much better preserved in Müller's fluid, which did not destroy the histological characters, and if they were at any time required for exhibition, it was sufficient to soak them for a few hours in a mixture of one part of spirit to four of water. By this means the colour of the Müller's fluid was washed out, and the specimen, though well hardened, presented a natural appearance.

Dr Cotterill said section had not been made because it would have spoiled the tumour, and if a diagnosis could be made without, it was better to keep it whole. He had very little doubt that it was a fibroma, but a microscopical examination could still be

made. The tumour was preserved in Müller's fluid till about three weeks back, when it had become so black and had shrunk so much that it was put in spirits.

Dr Foulis.—May not the fluid have been chromic acid?

Dr Cotterill was not certain, but thought it possible, as it was put in in the pathological department of the Infirmary. As to the two openings, though the upper was made accidentally, he should feel inclined to do the same thing again, more particularly as it was difficult to diagnose exactly the position of the tumour.

Dr Craig said he had found a solution of chloral hydrate of the strength of five or ten grains to the ounce a very perfect preservative fluid. He had specimens preserved in it for about twelve years, which were still in a very perfect condition.

Dr Foulis said that chloral hydrate did not preserve the histological characters. Müller's fluid and chromic acid did.

Dr Batty Tuke said he recommended the use of chloral hydrate solution to the Marine Station at Granton, where it had been found to preserve animals in a condition fit for dissection better than any other fluid that had been tried.

Dr M'Bride said that some time ago he had preserved a fibrous tumour from the naso-pharynx in chloral hydrate solution. When a section was made it was found to be quite destitute of epithelium.

Dr Johnston said that evidently the paper did readily admit of much discussion owing to the great rarity of the case and the absence of controversial points. He was pleased that Dr M'Bride had noticed his suggestion as to the excessive abduction of the cords possibly being due to the obstruction of the respiration, and hoped, with the excellent opportunities at his disposal, that he (Dr M'Bride) would soon be in a position to support this view or to refute it. The remarks on the operative treatment of such cases had been replied to by Dr Cotterill, so it only remained for him to thank the Society for the kind reception accorded to the paper.

2. *Dr Watson Campbell* of Duns read a paper on DIPHTHERIA, which will appear in a future number of this Journal.

Dr Foulis said that at first it had been his experience that almost every case of diphtheria in which the disease had passed into the air-passages had died. He confessed he did not know what to do in diphtheria except to support the patient as much as possible, and to keep him quiet, and especially not to disturb the diphtheritic patch with caustics. The plan he had adopted during the last few years was to saturate the patient with chlorate of potash as quickly as possible, and apply boroglyceride locally. He agreed with Dr Campbell that the patient should not be allowed to sleep for long at a time. He was entirely in accord with him in regard to permanganate of potash, but preferred boroglyceride because of its agreeable taste and antiseptic qualities. Since giving chlorate of potash in very large doses, frequently repeated,

in such a way as to saturate the patient, he had not lost a case of diphtheria.

Dr James Carmichael was specially interested in the treatment of diphtheritic affections in children. With the general principles of the management of such cases as laid down by *Dr Campbell*, and also with the remarks of *Dr Foulis* as to local treatment, he cordially agreed. He did not consider chlorate of potash of much value in these cases. He gave it sometimes in small doses, but large doses he thought decidedly hurtful. In regard to local applications to the throat in young children, he thought we were often in a very helpless position, from the difficulty of their application when the child resisted. He had never been able to induce young children to gargle, and local applications with the brush often alarmed them to such an extent as to make them obstinately refuse food or medicine by the mouth. In practice there were two methods of application to the throat he found available besides brushing. The spray was a most useful means to attain the desired end, and if we used an instrument with a long nozzle, such as that suitable for the anterior nares, and passed it well back into the mouth, there was comparatively little difficulty in making the application. There were many solutions which he had found useful besides the permanganate. Boroglyceride was undoubtedly good, being pleasant and non-irritant. He had not found it succeed in all cases. Lime water, perchloride of iron, perchloride of mercury, and lately pancreatic extract and resorcin, had been commended. The third method of locally applying remedies to the throat was by administering internal remedies, which, during deglutition, exerted a local influence on the affected part. The mixture he had found most useful for this purpose was one of perchloride of iron and perchloride of mercury, with glycerine and water. He considered it of great value. In his experience he had not found the true diphtheritic membrane disappear so quickly under treatment as had been indicated by *Dr Watson Campbell*. The croupous membranes, which were apt to be mistaken for diphtheritic ones, often did so in a few hours. In most cases of diphtheria the free administration of alcoholic stimulants was indicated. The recovery of the child very much depended on the extent of the local disease. If it extended far into the air-passages the prognosis was grave.

Dr Allan Jamieson said there was one point one would have liked to have heard a little about, the etiology of diphtheria. The disease was more common in the country than in the town, and occurred in places where there was nothing in the hygienic conditions to account for its appearance. It had been known to occur at considerable heights above the sea-level, and it had been observed in Australia that it had occurred at places at a considerable distance from each other, and in the direction of the winds. He was much interested in what *Dr Foulis* had said

regarding boroglyceride. He believed he was the first to use it in diphtheria. There was one disadvantage in gargling. The inflamed parts were kept in a state of vibration, and not given the rest they required. He agreed in the condemnation of caustics, but suggested that chromic acid, which removed the mucous patch in syphilis without setting up irritation, might be used in diphtheria.

Dr Craig stated that he happened to be in Biggar during an epidemic of diphtheria. The late *Dr Pairman* and other practitioners were then trying sulphurous acid as a local application, not in the form of gargles, which he believed to be mistaken in principle, but as a lotion applied to the part by a camel hair pencil, and also as a spray, and they had most successful results. He was inclined to agree with *Dr Watson Campbell* that diphtheria was a local disease, more or less parasitic in its nature, and the fact that it was best combated by parasitocides favoured this view. He had almost invariably treated his cases with permanganate of potash, in which he had very great faith. He did not think that *Dr Carmichael* understood *Dr Watson Campbell* in regard to the disappearance of the membrane. *Dr Watson Campbell* gave forty-eight hours as the shortest period within which it had disappeared.

Dr Johnston noticed that great importance was attached in the paper to gargling the throat frequently with permanganate of potash. Now he thought that the gargling was the least efficient method of applying antiseptics to the throat, and that it was much inferior to the spray or to direct applications. In addition to the irritation to the parts produced by the exertion of gargling, the fluid only came in contact with a limited portion of the throat. This had been proved experimentally by *Scheck* of Munich, who found that the only parts brought in contact with the fluid were the anterior surface of the soft palate and the tonsils, and hardly any of the pharynx.

Dr Craig said he was in the habit of teaching that to his class.

Dr James Ritchie deemed it of the utmost importance to recognise that diphtheria was at first a local disease, and that at a very early date it affected the system constitutionally. He thought *Dr Watson Campbell's* paper an excellent demonstration from his own practice of the truth of this theory. In this view careful attention to the local treatment was essential, the speaker adopted the plan of hourly germicide applications during the day, and every two hours over night. The kind of local application is determined partly by two considerations. First, post-diphtheritic paralysis most frequently affects those parts which are much used—the most common seat of paralysis was the soft palate—might not this frequency be determined by the excessive use of the part in gargling? He therefore preferred the spray and local applications by means of a brush. He generally used *Condy's fluid*, and found

it of special use in those cases affecting the larynx, and in order to ensure the proper inhalation of the spray he found it necessary—at least in children—to hold the nostrils during the application. The other consideration related to a symptom which is very variable in this disease, viz., the amount of pain. For this he had found a useful application in a solution of boroglyceride, first introduced to the notice of this Society some years ago by Dr Allan Jamieson. While attaching most importance to local treatment, the constitutional should not be neglected, and he was in the custom of prescribing chlorate of potash and perchloride of iron in mixture for internal use. Rest and careful dieting he considered to be essential.

Dr P. A. Young said the caustic treatment had been very properly condemned, but it had been pointed out that in severe epidemics in France, as pointed out by Bretonneau, the best results had been got by the priests, who invariably used the caustic treatment. The last utterances regarding chlorate of potash declared it to be a broken reed. One remedy not mentioned had been very successful in his hands—continuous steaming. He was not inclined to consider pain in diphtheria an anxious symptom. It indicated that the membrane was coming away.

Dr Webster praised lactic acid, which he applied on a swab, using the full strength.

Dr Craig said the strength of the lactic acid was much increased in the new Pharmacopœia.

Dr Watson Campbell replied.

OBSTETRICAL SOCIETY OF EDINBURGH.

SESSION XLVII.—MEETING VI.

Wednesday, 12th May 1886.—Professor SIMPSON, *Vice-President, in the Chair.*

I. *Mr Skene Keith* showed—(1), a series of specimens of DISEASED OVARIES and FALLOPIAN TUBES, and read the following notes of the cases:—

CASE I.—The patient, aged 34, from whom these specimens were removed, had suffered from pain in the left side, dating back to the birth of her second child in 1875; the pain had been much worse after her last child was born, $4\frac{1}{2}$ years ago. The previous treatment has consisted in regular attendance for six months at the gratis hour of an Edinburgh obstetrician. She was greatly emaciated, and the diagnosis was easy. You will see that both the ovaries and Fallopian tubes are diseased.

CASE II.—In this case the pain had lasted five years, and was said to have been caused by an injury received ten days after the birth of her last child. Here also the woman, who was 34 years

of age, had become very thin. She had been for several weeks in a gynaecological ward, and had also had treatment from her own doctor. There were adhesions on both sides, to intestine, and in the pelvis; the right ovary was cystic, the left small and cirrhotic. Both tubes look almost healthy.

CASE III.—This patient, aged 27, was not married, and thought that she had injured herself while nursing her mother seven years ago. The pain was first on the left side, but for several years has been on the right side also. The girl was very fat. She had had all kinds of treatment for years, and had been an in-patient in two gynaecological wards. The operation was a difficult one, and the incision had to be prolonged to nearly four inches. Both ovaries were transformed into cysts, and these were almost entirely between the layers of the broad ligament. The specimen is the left ovary and tube.

CASE IV.—This patient, aged 28, had been married nine years, and had never been impregnated. She had suffered from pain in the back and on both sides for six years. Dyspareunia was a well-marked feature in this case. Previous treatment had been conducted both in private and in hospital. This operation was difficult, due to pelvic adhesions and to the necessity for enucleation.

CASE V.—In this case a constant bearing-down pain followed the birth of the first baby twelve years before operation. The second baby made things worse; but until her last child was born, eight years after the first, the pain was endurable, and she had little treatment. Since then she has been in the gynaecological ward of three infirmaries without receiving any benefit. She was very thin. The uterus was retroverted, the right ovary enlarged and adherent, and the left tube was thought to be dilated and hard. You will see that the left ovary is elongated, and it was this that was mistaken for a distended Fallopian tube; otherwise the diagnosis was correct. Instead of simply allowing the uterus to fall back, I fixed it up to the abdominal wall by means of the right broad ligament, as used to be done in the old clamp ovariectomy days.

CASES VI. and VII.—The next two cases were fixed up in the same way. The first for slight lowering of the uterus, along with disease of both ovaries and tubes, in a patient who had had prolonged previous treatment. In the other case, the uterus lay outside the vulva, and there was disease of the right ovary and tube of eleven years' standing. There were pelvic adhesions in both cases.

CASE VIII.—Those specimens were removed from a young married woman of 22. She had suffered from pain in both sides for five years, ever since her only child was born. Shortly after

marriage she became syphilitic, and there was a profuse discharge for some time before her confinement. There was no pus in either tube or ovary.

What the ultimate results will be it is, of course, not possible to say. The 1st, 5th, 6th, 7th, and 8th have all got on quickly; in the others the convalescence has not been so rapid.

These are the preparations from all the cases I have operated on this year.

(2.) A NEW FORM OF VAGINAL SYRINGE, designed to enable the patient to dispense with the assistance of a nurse.

II. *Professor Simpson* read a paper on A COMMON NOMENCLATURE IN OBSTETRICS. After remarks by Drs Connel, Leith Napier, and Hart, it was resolved to remit the paper for consideration by the Council; and that their report be presented to the next meeting of the Society.

III. *Mr Skene Keith* read a NOTE OF CASE OF ALEXANDER-ADAMS' OPERATION, FOLLOWED BY REDISPLACEMENT AT THE END OF THREE MONTHS, which appeared at page 55 of this Journal.

Dr Sinclair asked Mr Keith if he was satisfied as to whether the ligaments elongated or gave way altogether. He was of opinion that in this case the ligaments must have given way. He himself had a case some time since in which the wire broke before adhesions were formed. Of course the ligaments gave way and the operation failed. He would therefore like to know whether Mr Keith had reason to believe that adhesions had been formed in this case of sufficient firmness to secure the ligaments. It seemed to him that it was very possible that the ligaments had slipped from the incision before the adhesions were sufficient to bind them securely.

Dr Hart was glad to have Mr Keith's paper. We seldom hear of failures in such-like operations, and it was a satisfaction to have all cases, whether successful or not, recorded, in order that we may form a reasonable opinion of the value of the operation. He had never yet been able to understand why some women complained of so much distress and suffering from retroversion, when others seemed to suffer no inconvenience whatever of what seemed a similar condition. It seemed to him that something other than the retroversion was wanted to account for the symptoms of these cases, and hence he doubted whether this operation was likely to yield any satisfactory results, because the mere cure of the retroversion did not attack the true cause of the suffering which these women endured.

Dr Leith Napier disagreed with Dr Hart in this matter. He was of opinion that the retroversion was the cause of the distress in most of these cases, and that its cure would be followed by relief.

Hence he regarded the operation in proper cases as of the greatest utility.

Dr Connel had some months ago sent a patient to *Dr Adam* of Glasgow. She had been the subject of retroversion for a very long time, and for eight years was almost entirely laid aside by her sufferings. *Dr Adam* operated; he pulled forward the ligaments on both sides, secured them with catgut sutures. The patient made an excellent recovery, and is now quite well. He was bound to say that the results of this case impressed him greatly as to the value of the operation, and he would be inclined to look to it as a satisfactory way of dealing with such cases in the future.

Mr Skene Keith, in reply to *Dr Sinclair*, said that he was of opinion that the ligaments had been given abundance of time for forming proper adhesions, and did not think that the redisplacement could be accounted for save on the supposition, that the ligaments had stretched and allowed the uterus to fall back again.

Part Fourth.

PERISCOPE.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By *WILLIAM CRAIG, M.D., F.R.S.E.*, Lecturer on Materia Medica, Edinburgh School of Medicine, etc., etc.

SANTONATE OF ATROPINE.—Santonate of atropine, a compound of atropine and santonic acid, is recommended by Bombellon (*Pharm. Jour. and Trans.*, 1st May 1886) as presenting advantages over any other salt of atropine for ophthalmic purposes, a solution of it being perfectly non-irritating and not liable to fungoid growth. The action is said to be mild, and to resemble that of homatropine; the mydriatic action equals that of atropine sulphate; 1 drop of its solution of 1 centigramme in 20 grammes of water is sufficient to dilate the pupils, the dilatation disappearing in from twelve to twenty-four hours. Santonate of atropine is described as a white, amorphous, non-hygroscopic powder. A dilute solution may be prepared with cold water; a stronger solution requires the aid of a little heat. The solution should be kept in yellow glass bottles to avoid the formation of photo-santonic acid under the influence of light, though it is not yet known whether this change would be prejudicial.—*Therapeutic Gazette*, June 1886.

CARBOLIC ACID IN HYDROCELE.—*Mr G. Buckston Browne*, in the *British Medical Journal* for 26th June, relates a case in which after the hydrocele was tapped and the fluid drawn off, and tincture of iodine injected, the fluid quickly returned after three successive

operations. He afterwards drew off the fluid, and injected "60 minims of pure carbolic acid, deliquesced with 5 per cent. of glycerine. Next day the part was swollen, but not very tender. No fluid was ever again detected in the tunica vaginalis. The cure was rapid, complete, and nearly painless; and the case deserves notice, as the carbolic acid was successful after iodine had clearly failed."

OLEUM EUCALYPTI IN MALARIAL AFFECTIONS.—Dr Musser, Philadelphia, records a series of experiments with this oil in the treatment of various forms of malarial fever. He gives ten drops on a lump of sugar three or four times daily to adults, but states that three or five drops repeated oftener would be of more service. He says, "The oil of eucalyptus is of material value in malarial affections, and in cases where quinine is, on account of idiosyncrasy, inadmissible, the drug may be relied on in nearly one-third of all the cases of vague malarial intermittent affections." He concludes thus:—"1. That the oil of eucalyptus is of decided value in about 33 $\frac{1}{3}$ per cent. in all cases of intermitting malarial fever. 2. That it has no specific value in any one type of the disease. 3. That the longer the duration of the disease the less liable is it to do good. 4. That relapses are not prevented by it. 5. That its influence on the spleen has not been demonstrated. 6. That a dose of ten drops four times daily has been a sufficient dose, but that five drops every three hours would be of greater value possibly. 7. That good results are not attained as quickly as by large doses of quinine, but that a good effect should be observed within five days at least."—*Therapeutic Gazette*, June 1886.

THE ACTION OF ANTIPYRIN.—Dr J. H. Frankenberg reports in the *Med. Rec.*, May 22, 1886, that his experience with antipyrin for the last eighteen months warrants the following conclusions:—1. We possess in antipyrin an antipyretic which will reduce temperature most powerfully and rapidly. 2. It is in the great majority of cases perfectly safe; only in very much depreciated states and in delicate children must it be warily given, and guarded by cardiac stimulants. 3. It lacks nearly all the disagreeable features which other antipyretic drugs possess. Perspiration occurs in a large proportion of cases, but does not seem to enervate the patients or render them uncomfortable. Pruritus occasionally coexists with the eruption. Vomiting now and then occurs. 4. It may readily be introduced into the system through various channels. Its taste is not particularly disagreeable, and may be easily disguised by some aromatic. Hypodermically given, it acts more decidedly and rapidly, and avoids the possibility of disturbing the stomach. It is unirritating. It may also be given per rectum. 5. It cannot cope with quinine as an antiperiodic or tonic, nor with salicylic acid in acute articular rheumatism. 6. It has practically no influence upon the pulse and respiration. If the pulse be dichrotic the secondary

wave entirely, or nearly, disappears. In other words, it raises the arterial tension. In conclusion, he says that very little doubt is entertained but synthetic chemistry will develop many new compounds which may prove of avail at the bedside as antipyretics; but it is our firm conviction that at the present day antipyrin, in sufficiently large doses, is the most powerful, the most certain, and the safest antifebrile drug that we have in our *Materia Medica*.—*Therapeutic Gazette*, June 1886.

TREATMENT OF DIARRHŒA IN CHILDREN.—In the *British Medical Journal* for 17th July Dr James Braithwaite, of Leeds, recommends for the form of diarrhœa in children occurring after weaning, and from that period to four or five years of age, which is characterized by the most horrible offensiveness of the motions, the following:—

R	Ferri sulph.,	.	.	.	.	℥j.
	Sodii salicylatis,	.	.	.	.	℥j.
	Glycerini,	.	.	.	.	℥iij.
	Aquam ad.,	.	.	.	.	℥iij.

M.

The iron and salicylate should be dissolved separately, and the solution mixed. One teaspoonful must be given every hour until the stools become well blackened, which happens in about 24 hours; or a larger dose may be administered at longer intervals. The medicine should then be given every three or four hours, and occasionally a small dose of castor oil, to clear the bowels well out.

PERISCOPE OF GYNÆCOLOGY AND MIDWIFERY.

By J. MILNE CHAPMAN, Inverness.

THE ARCHIVES OF GYNÆCOLOGY, OBSTETRICS, AND PEDIATRICS.—This is a new “bi-monthly journal of over 600 pages, devoted exclusively to the subjects indicated in its title. It is edited by the members of a Gynæcological Club, and contains a complete *résumé* of all current literature in the three departments, valuable alike to the general practitioner and to those making a special study of those branches; each number treats of over 100 subjects, and contains the precepts and experience of the most eminent writers of this country (America) and Europe.” Judging from the first numbers, we would say that the foregoing is a very modest introduction for a very good and useful journal. We will draw on the Archives freely for the periscope in future.

ETIOLOGY OF RETROVERSION, FLEXION, AND OF PROLAPSUS UTERI.—To the second part of Vol. ii. *Zeitschrift f. Geburtshilfe u. Gynäkologie*, Küstner contributes an interesting article on the above subject. After long experience and observation he has arrived at the following conclusions:—1. In the majority of healthy puerperæ

it is easy by bimanual examination to produce a retroversion, and frequently a retroflexion of the uterus. 2. The increased voluntary abdominal pressure displaces the uterus in a different manner from gravitation. The former drives the uterus in about its own or the pelvic axis, towards the pelvic outlet. 3. When the uterine attachments (ligaments) are normal it is not possible, either in the puerperal or non-puerperal state, to bring the uterus into retroversion or retroflexion, either by excessive distension of the bladder alone, or by this with distended rectum, or by the latter alone, or, finally, with the assistance of the greatest voluntary abdominal pressure possible. 4. On the contrary, this is possible as soon as the uterine attachments have in any way become affected. 5. Or when the uterus is drawn so strongly to one side by cicatricial contraction, that the muscle tissue of one ligament on account of passive stretching, and the other on account of passive relaxation, cannot perform their functions. 6. A large proportion of cases of retroflexion that occur in the latter part of the puerperium arise solely because there had existed previously (before gravidity) a retroflexion, and the muscle tissue, whether primarily by active or passive means, has thereby also become weakened. 7. On the contrary, as the result of clinical observation, it is highly improbable that the continued dorsal position of the healthy puerpera frequently produces retroflexion. 8. It is also improbable that the dorsal position of women affected with septic poisoning in child-bed very often produces retroflexion. 9. It is also improbable that defective involution of the placental site on the anterior uterine wall frequently causes retroflexion. 10. Although the causes mentioned under 4 or 5 may give rise to a great number of cases of retroflexion, this number is comparatively insignificant when compared with the cases of retroflexion produced by the other diseases of the genitals. 11. It has been already demonstrated that a much larger number of cases of retroflexion originate during virginity and puberty than has previously been suspected. 12. The virgin uterus is much easier to retroflex either bimanually, or from accidental causes, than the uterus which has been gravid. 13. In most cases retroflexion of the gravid uterus is to be considered as an arrest of development, having, perhaps, its analogy in incomplete decensus testiculorum or cryptorchis.

INDICATIONS FOR PESSARIES AND METHODS FOR THEIR APPLICATION (Leake, *Texas Courier and Record of Medicine*).—The following are the writer's conclusions:—1. That, while there exists great difference of views as to the expediency of using pessaries, the practical gynæcologist also is influenced in his opinions by his own individual experience, and will not servilely bow to the authority of those who perhaps rejected such aids on insufficient grounds. 2. That the classical pressure symptoms, including

weight in the pelvis, sacralgia, bladder and rectal irritation, difficulty and pain on locomotion, dragging pains in hips and lower abdomen, etc., combined or uncombined with systematic effects, are relieved by a skilful adjustment of pessaries, and must be continued to be held as an indication for their employment. 3. That, in all cases of anæmia, neurasthenia, hysteria, presenting themselves, the cause may be located in some displacement of the pelvic organs, and this point should be determined by immediate examination. 4. That due regard must be had to the natural mobility and normal position of the uterus in the placing of pessaries. 5. That, contrary to the general view, retroflexion can be redressed and maintained in position by a skilful adjustment of the traction lever pessary. 6. That pessaries should be fitted and placed with the patient in Sims' position, this being the most favourable for such procedure. 7. That, while the evidence thus far has been discouraging as to the curability of uterine displacements by means of pessaries, we must, at least, acknowledge their powerful aid as palliatives, and we are justified in believing that the future statistician will demonstrate their greater efficacy in tables showing permanent results.

TRAUMATIC RUPTURE OF THE UTERUS (Dr Plenio, *Centralblatt für Gynäkologie*).—A primipara eight months pregnant fell from a loaded hay waggon, striking on the shoulders. She felt a severe pain in the abdomen, and became unconscious in a few minutes. She was taken to a neighbouring hospital, where the diagnosis was made of traumatic rupture of the uterus, with a dead child lying free in the abdominal cavity. Laparotomy was performed, the child and placenta removed, and the rupture carefully closed with interrupted silk sutures. The laceration was on the anterior wall near the middle, and extended down near the median line to the os internum. A drainage-tube was inserted. The patient made a slow but complete recovery, having symptoms of septicæmia. The after-treatment consisted of opiates, ergotin subcutaneously, and carbolic acid (three per cent.) injections.

INFLAMMATION OF THE LINING MEMBRANE OF THE FALLOPIAN TUBE, WITH EXUDATION OF PUS OR PUROFIBRINOUS FLUIDS (Dr R. Stansbury Sutton, M.D., in the *Journal of the Am. Med. Ass.*)—"This disease is termed salpingitis, and like a bronchitis, it may be acute or chronic. The acute form is not distinguishable from an ordinary peri-uterine inflammation. The chronic form may be recognised. In some cases the diagnosis is limited to certain periods in the history of the case; in other cases the symptoms may be so constant as to render it possible to make the diagnosis with considerable accuracy. The causes of this disease have frequently been said to be limited to gonorrhœal infection. This is an error. It does arise in strumous women from the constant introduction into the uterus of instruments, whether by reason of the introduction of septic

matter, or from mechanical violence, I am not sure. But it is more than probable that it arises from the introduction of septic matter. The entire gynæcological practice of some seems to be limited to a single procedure, viz., the introduction of the uterine sound; and the *rationale* of the treatment is explained to the patient thus: "There are adhesions between your womb and bladder, or womb and rectum, and these must be broken up." Or: "You have got a tumour in your womb, and it will be removed by making pressure on it in this way." I have just now under my care four striking examples of this treatment persisted in to the production of salpingitis, unilateral, in one; chronic cellulitis and fixation in retroversion of the uterus in another; chronic invalidism in a third; and the fourth case is absolutely free from all disease, but had been gouged regularly for a supposed fibroid which never existed. The constant poking at the interior of a uterus with sounds will frequently produce an inflammatory condition of the lining member of the uterus and tubes as well as a general pelvic cellulitis. The older I grow, and the more experience I get, the more am I convinced that local treatment directed to the interior of the uterus instead of to the surrounding structures is entirely too much practised. I find scarcely any use of late years for the old Simpson's sound, sponge, or laminaria tents; they lie about as relics of the past. Symptoms are not longer treated for diseases, and the uterine cavity is no longer made a chemical laboratory. The condition of the pelvic and abdominal viscera receives more attention, and less local treatment is required. Tonics, massage, rest, hot water, regulation of the bowels, a good diet, and an occasional application of iodine to the vault of the vagina, will soon do away with a host of cases formerly treated with text-book punctiliousness. The cases requiring surgical treatment receive it promptly and with the loss only of enough time to prepare the case. I am sure that such a course is productive of less harm and of more good than the other. An acute salpingitis recognised as a peri-uterine inflammation should be treated on the well-established principles laid down by all authors. The existence of chronic salpingitis is not always easy of recognition. Mr Lawson Tait said to me in 1882, at his clinic in Birmingham, England, "Please examine that woman." I did so. He said, "What is that?" I replied, "A case of chronic cellulitis." "No," said he, "it is a case of salpingitis, pus in the tubes." I now for the first time knew that I had seen the disease before and had not recognised it. I have seen many cases since, some operated upon by Mr Tait, and I do not yet feel competent to always recognise the condition. When the symptoms are well marked, and the patient is a married woman or a prostitute, it is easier to recognise it than when the patient is unmarried and above all suspicion—because *sexual intercourse in chronic salpingitis is well-nigh unendurable*. Occasionally the muco-pus or pus and serum will escape from the tubes

through the uterus and relief follows; if the tube fills again the suffering returns. I have seen this occur. Bimanual palpation will reveal a fullness on one or both sides of the pelvis. This fullness or swelling is not solid and painless, but semi-elastic and painful. The swelling may be well off on the sides, or be directly behind the uterus itself. Other structures than the distended tubes are likely to be involved in the swelling, and if adhesions have formed the mass is fixed. Pain, reflex in character, is usually complained of in one or both groins, in the back, in the bladder, or down the legs. Frequent attacks of pelvic peritonitis occur, lasting eight or ten days. During these the patient cannot walk about without much suffering, and there is an acceleration of pulse and temperature. Pressure bimanually produces a feeling of faintness, and occasionally reflex nervous phenomena, approaching hysteria, are present. The patients lack colour, and bear the evidence in their faces of suffering. One patient often complained of being 'so stiff as to be scarcely able to walk.' In all of my own cases I have observed that the menstrual flow was disturbed, being profuse and lasting beyond the time, and finishing up with a leucorrhœal discharge sufficient to annoy the patients. In one of them the tube was now and then emptied through the uterus. There was no mistake about this, for I finally removed the tube when it was full of pus."

TREATMENT OF CHRONIC METRITIS.—Dr Arnsteen, in the *Revue de thérapeutique medico-chirurgicale*, recommends the cauterization of the uterine cavity for the cure of chronic metritis. He says in substance that chronic metritis, as is well known, is always attended with irregular menstruation, the flow being too abundant or too scanty, and particularly during the period of induration the patient may at certain times flow freely and at times not at all. When the menstrual function is again regularly established it will be found that the uterus has regained its normal state. The efforts of the physician should therefore be directed to the restoration of normal menstruation. This result may be brought about by the active congestion induced by the cauterization. The introduction of the cauterizing instrument causing a contraction of the uterus which induces a rush of arterial blood which displaces the venous blood accumulated in that organ. The breaking down of the eschar during the following days brings about frequent contractions which have the same result. The cauterizations may be made, without the patient being confined to bed, every eight days, afterwards twice a week. Sensitiveness of the uterus, exudations, and inflammation of the neighbouring organs, are contra indications for the operation.

HYDRASTIS CANADENSIS IN UTERINE HÆMORRHAGE.—Dr Nikolai A. Jivopistzeff, house-physician in the gynæcological wards of the Emperor Paul's Hospital in Moscow, states his

experience of the therapeutic effects of fluid extract of *Hydrastis Canadensis*, which he has administered in over twenty cases of uterine hæmorrhage of various descriptions (menorrhagia, flooding from uterine atony, fibroids, cervical cancer, etc.), that "the best results from hydrastis were obtained in cases of chronic and subacute hæmorrhage depending on an inflammatory condition of the uterine tissues and surrounding pelvic organs," as well as on displacements of the womb. "In other words, successful results from the use of hydrastis may be expected only in cases where the uterus is firm, enlarged, tender; where its mucous membrane is inflamed, softened, or even ulcerated; or where there is some exudation around the womb. In all other cases, success is more or less doubtful. Thus, in cases of uterine fibroids and cervical cancer, the hydrastis treatment utterly failed to control bleeding. Dr Jivopistzeff confirms the statement that hydrastis produces a favourable influence on dyspepsia, which often accompanies diseases of the female sexual sphere. Under the treatment, digestion improves, gastric pain and tenderness disappear." The medicine was given in twenty minim doses four times a day.—*Meditz Obezrenie*.

OCCASIONAL PERISCOPE OF DERMATOLOGY.

By W. ALLAN JAMIESON, M.D., F.R.C.P., Extra Physician for Diseases of the Skin, Edinburgh Royal Infirmary; Lecturer on Diseases of the Skin, Edinburgh School of Medicine.

IS LEPROSY CONTAGIOUS?—Brocq has made an exhaustive inquiry into this question, and concludes in the affirmative. After citing a great many positive facts which bear upon it, he examines the negative evidence, and thus expresses himself:—"The negative facts are far from being as general as we are led to believe; it is necessary to make the following reservations with respect to them. In accordance with the most recent researches leprosy is not contagious in the same manner as are several other acute diseases; it is not even contagious in the proper sense of the word, but purely and simply inoculable. According to this opinion—with which we agree, since it appears to us most reasonable—to acquire leprosy as to acquire syphilis, it is not enough to live with a leper and to be in contact with him; it is essential that this leper exhibits on some part of his body a leprous lesion secreting an inoculable secretion, a matter which must come in contact with some wound, minute though it may be, on the healthy person. It results from this that a leper need not always be a focus of infection, since it is very possible he has not on his body inoculable lesions; and, on the other hand, that a person capable of taking leprosy is not always in the state needed for its acquisition, since he must have some breach of surface with which the leprous material must come into contact." Again, Leloir has stated that a

medical man had inoculated himself and twenty others without result. This was in 1885. But with regard to this alleged failure, Brocq points out that it must not be forgotten that the incubation of leprosy is very protracted—at least several years. It would appear that with the decline of leprosy in any country the belief in its contagiousness grew less also. In the Middle Ages the disease was universally thought contagious, but when by isolation it died out, a hereditary or a climatic or dietetic origin became the prevalent explanation. The article of Brocq will aid in re-establishing its inoculability.—*Annales de Dermatologie et de Syphiligraphie*, Nov. and Dec. 1885.

SYPHILIS HEREDITARIA TARDA.—Wolff of Strassburg cites a number of interesting cases which bear on the question of a late hereditary syphilis. Two of these are specially interesting, because in them the disease had been mistaken for lupus before they came under Wolff's care. And in one for seven, in the other for eight years, the ravages of the disease had extended, and had led to irreparable destruction of the nasal bones and of the skin of the face. One of the cases had been considered scrofulous. In both cases mercurial treatment arrested the further progress of the disease. Wolff does not think that these are cases of late hereditary syphilis in which there have been absolutely no manifestations of the disease in early childhood. He believes that such were either unnoticed or unrecognised. He defines syphilis hereditaria tarda as that form in which tertiary symptoms appear during or after puberty, and from which the inference can be drawn that they are referable to heredity and not to infection. A slight difficulty in arriving at this diagnosis exists. If historic data regarding the parents and other children are not available, we must go back to symptoms of past disease, since the later manifestations of syphilis *acquired* in early childhood cannot be directly distinguished from those due to inherited disease. We must in such cases find our diagnosis in those earlier and first symptoms of which the traces remain, and which are not present in the acquired form. In the matter of treatment Wolff remarks: It is proved that mercury and iodide of potassium exert an unfavourable influence on the scrofulous and tubercular. If, then, we are in doubt as to the nature of the ailment, we must bear this in mind in using these remedies. Should, however, the diagnosis be established from the array of symptoms present, aided in some cases by the failure of previous anti-scrofulous measures to cure, the anti-syphilitic treatment should be energetically commenced. In cases where the lesions are accessible, local measures by mercurial plaster, calomel, solutions of corrosive sublimate, should be first tried. Mercury is in such a manner absorbed, but in minute quantity. If, in this way, improvement manifests itself, resort should be had to constitutional treatment. Should the case be unmistakable, no time should be

lost. Although iodide of potassium passes as a specific for the late manifestations of syphilis, yet its efficacy is much less than that of mercury. Methodical inunctions with unguentum hydrargyri, and treatment by hypodermic injections, yield surprising results. As regards iodide of potassium, it is to be observed that we can only expect favourable effects from it when it is administered in sufficient doses. Thus 15 to 45 grains daily have often no influence on the diseased conditions; larger doses are often ill borne by broken-down subjects. We should, therefore, only resort to iodide when we are dealing with persons relatively well nourished and strong, and whose digestive systems are in good order. In such the dose at first should be 45 grains daily, and while digestion is watched and the diet regulated, this should be increased to 90 or even 120 grains. That the organism will bear such doses, and even larger ones, is proved by a case of psoriasis lately under Wolff's care, and similar cases recorded by Haslund, where even as much as one ounce of iodide was given daily without the production of iodism. In one case cited re-infection took place six years after the symptoms of a late hereditary syphilis had been removed by mercury. This proves, Wolff remarks, that in exceptional instances syphilis is capable of complete cure.—*Volkman's Sammlung Klinische Vorträge*, No. 273, 1886.

VARICELLA GANGRÆNOSA.—Dr Payne contributes another instance of this disease, for the elucidation of which we are mainly indebted to Mr Jonathan Hutchinson. The child, aged a year and a half, was fairly healthy, though insufficiently fed, when it contracted chickenpox. The eruption was thought to have passed away, when an ulcerative affection of the skin succeeded, and the child fell off in health. These sores had existed for three weeks, when she was seen by Dr Payne. They were sharply cut, with injected margins, and in general appearance were not unlike an ulcerative syphilide, though there were no other signs or evidence of syphilis. The child died, and on post-mortem examination the lungs showed acute miliary tuberculosis, but there was no trace of tubercular structure round the ulcers. This coincidence of tuberculosis with varicella gangrænosa is not fortuitous, since Dr Barlow has met with it in six fatal cases of this disease. Payne asks whether in such cases the chickenpox said to occur was really ordinary varicella. — *Transactions of the Pathological Society of London*, 1885.

RESORCIN IN SKIN DISEASES.—Ihle regards this as a specific in tinea tonsurans and tinea sycosis. Its peculiar anti-parasitic action is best seen in the case of small patches. When two or three applications of a strong ointment have been made the inflammation subsides. Epilation is not needed when resorcin is employed in tinea sycosis, still the hairs are forced out of the follicles by the working in of the remedy. An ointment composed

of the finest resorcin 10·0, white paraffin ointment 50·0, oxide of zinc and starch, each 25·0, is recommended. The strength may be increased to 25 or 50 per cent. if the 10 per cent. is well borne. The hairs should be clipped every few days, not shaved. Good results were also obtained in seborrhœa with falling off of the hair in some cases where other well-known applications had failed. The formula was—Resorcin 5-10 parts, olei ricini 45 parts, spiritus vini 150 parts, bals. Peruvian 0·5 parts. This should be rubbed in daily with a flannel rag. Not only did the hair cease to come out, but the itching was relieved.—*Monatshefte für praktische Dermatologie*, Dec. 1885.

TREATMENT OF FAVUS, RINGWORM, AND ALOPECIA AREATA AT SAINT LOUIS, PARIS.—Besnier has laid down the law "that the duration of treatment of a parasitic affection is proportional to the time necessary for the eradication of the parasite." There is not, in the absolute sense of the word, a parasiticide, the therapeutic action of such is always reduced to the production of an eliminatory vital irritation. In the present state of science we possess no medicinal agent capable of so modifying the living cell as to render it unsuited for the germination of the microphyte, without altering the cells in their vitality to the point of compromising their local life. Cutting the hair with scissors is preferred to shaving, as Besnier believes that the razor is the most frequent cause of auto-inoculations. In favus and ringworm of the scalp, the affected parts are touched once in eight days with crystallized acetic acid, or with a mixture of equal parts of the acid and tincture of iodine. Epilation is essential in favus. In ringworm a sulphur pomade, 4 to 8 per cent., is used. In alopecia areata the hair is cut short, and those round the margins of the affected areas are epilated. Crystallized acetic acid is applied to the denuded parts; and should this cause too much irritation, the parts are anointed with fresh butter, and the head bathed with warm water and soap. Crystallized acetic acid and chloroform, equal parts, may then be used from time to time, or a mixture of equal parts of aromatic spirit of ammonia with 5 per cent. of tincture of cantharides. With these measures, however, the duration of treatment does not seem to be shorter than with ourselves. Thus of five recorded cases of alopecia the average duration was fourteen months till cured; of six cases of tinea tonsurans capitis, a year; and of two of favus, seven months.—*Traitement des Teignes, Thèse par Venegas 7 Canizaries*, Paris 1885.

TRICHOPHYTON TONSURANS.—Dr Thin, continuing his researches on the cultivation of the fungus of ringworm, has adopted Koch's gelatinized meat juice as a medium. In this, when peptonized and neutralized, the trichophyton grew readily, even when the hairs which contained were submerged, and the spores excluded from all contact with the air. His observations confirm, in his

opinion, the view that it is not related to the ordinary fungi, such as penicillium or mucor. When ringworm hairs and penicillium spores are "sown" in parallel lines on the surface of the medium, in twenty-four to forty-eight hours the penicillium will be found to be growing with great rapidity, while the mycelium of trichophyton has made, in comparison, very little progress. In time, too, organs of fructification are fully developed in the penicillium, which stage is never reached in artificial cultivations in the case of the trichophyton. Koch agrees with him that the latter is a distinct and independent kind of fungus.—*Proceedings of the Royal Society*, 1885.

LEUCOPLAKIA BUCCALIS.—According to Fletcher-Ingals (*New York Med. Journal*, 25th July 1885), this is a chronic affection of the buccal mucous membrane, characterized by thickening of the epithelium and the formation of white patches, opalescent and slightly elevated, which, after lasting a considerable time, and, as a rule, cracking and becoming painful, are rather liable to degenerate into epithelioma. It is an idiopathic disease, distinct from psoriasis, the smoker's patch, and syphilis. It is met with especially in men, and during the latter half of life, but has also been seen in women. It is so frequent in excessive smokers, that one might look on the abuse of tobacco as a predisposing cause, did not cases occur where the affected person had never smoked. Local applications have hitherto either been useless, or have hastened the transformation into epithelioma. Salter recorded a case where total ablation of the diseased parts followed by cauterization of the wound by the actual cautery cured. Ingals relates the case of a man aged 42, in whom he practised at several sittings the gradual destruction of the morbid product with the galvano-cautery. He made the cauterizations very superficial, so as to destroy no more than the epithelial layers, preferring to return several times to the same point than to go too deep at first. When the parts had healed there was a normal mucous membrane, only showing two or three small scars where the burning had gone a little too deep. The cure continued four months after. Joseph (*Deutsches Med. Wochenschrift*, No. 43, 1885) states the results of treatment by lactic acid. The patient was a man of 60, who had suffered for nine years from leucoplakia, which had invaded in succession the tongue, the inner surface of the lips, and the cheeks. On the tongue it had become confluent. There were shallow furrows dividing the surface into small polygonal areas, and painful fissures. He had suffered previously from dyspeptic attacks of short duration. Syphilis did not appear to have been a cause. He had had a chancre not followed by symptoms 35 years before. But he had used tobacco immoderately. This was interdicted. At the same time the affected parts were rubbed

each day for several minutes with a piece of cotton wool, impregnated with concentrated lactic acid. The pain was sharp, but did not continue long, and the repeated rubbings led speedily to an exfoliation of the altered epithelium, leaving in its place superficial abrasions which healed in a few days. At the end of six weeks the cure was nearly complete, but a definite opinion must, in the meantime, be reserved as to its thoroughness and permanence.—*Annales de Dermatologie et de Syphiligraphie*, December 1885.

THE TREATMENT OF ECZEMA AND IMPETIGO IN CHILDREN BY THE ADMINISTRATION OF CHRYSAROBIN INTERNALLY.—Stocquart records a number of cases so treated without any external remedies. The dose varied from the $\frac{1}{16}$ of a grain in infants to the $\frac{1}{4}$ of a grain in children of four or five years, and the duration of treatment from one to three weeks. The cases were distinguished by abundant oozing from the surface affected, and the diminution of weeping and lessening of the redness of the parts were the first effects of the remedy noticed. He believes that the drug possesses the power of causing contraction of the vessels. — *Monatshefte für praktische Dermatologie*, January 1886.

PERISCOPE OF OPHTHALMOLOGY.

By GEORGE A. BERRY, M.B.

STATISTICAL RESEARCHES IN CONNEXION WITH THE OCULAR MANIFESTATIONS OF SYPHILIS.—Badal (*Archives d'Ophthalmologie*, April 1886) has met with 631 cases of ocular syphilis amongst 20,000 eye patients in Paris and Bordeaux. In a number of cases the manifestations were not confined to one region of the eye, but the following table gives the number of cases met with in each region, and shows the relative frequency with which they are attacked:—

Iris and ciliary body,	.	.	.	242 cases.
Choroid,	.	.	.	141 "
Optic nerve,	.	.	.	139 "
Third nerve,	.	.	.	107 "
Retina,	.	.	.	57 "
Sixth nerve,	.	.	.	28 "
Centres of vision,	.	.	.	25 "
Lens,	.	.	.	16 "
Cornea,	.	.	.	12 "
Lids and conjunctiva,	.	.	.	11 "
Bones of orbit,	.	.	.	5 "
Fourth, fifth, and seventh nerves,	.	.	.	9 "
Lachrymal passages,	.	.	.	1 "

Of the cases of iritis only 5 per cent. were gummatous. Nearly one-half of all the cases of specific iritis occurred within the first year of inoculation, one of the remaining quarters during the second year, and the other spread over the next thirty years after. Badal, therefore, considers that syphilitic iritis is not, as many maintain, a manifestation of the disease intermediate in time between secondaries and tertiaries, but is most frequently one of the early secondary symptoms. In a third of his cases of syphilitic iritis there were other complications, most of the later cases being accompanied by choroiditis. Of the cases of choroiditis more than one-half occurred in the first five years after the disease was contracted, one remaining quarter during the next five years, and the rest in the twenty years following. Two-thirds of the cases of specific choroiditis were complicated by other lesions—iritis, optic neuritis, paralysis of ocular muscles, etc.

ON THE INFECTIOUS GERMS CONTAINED IN THE LACHRYMAL SAC, AND THEIR BEHAVIOUR TOWARDS ANTISEPTICS.—In a previous periscope we referred to the work which had been done by Sattler in connexion with the application of antiseptic measures to eye surgery. His researches have been still further extended, the object of his recent experiments, communicated to the last congress at Heidelberg, being to obtain and isolate the different forms of germs contained in pus from the conjunctiva and tear sac, and to test their independent action on the wounded cornea, as well as their behaviour towards antiseptics. Widmark had previously made investigations of the same nature, mainly microscopic examinations of pus stained with aniline, a method which Sattler considered insufficient to elicit much information on the subject, and which he discarded for the method of cultivation. As some of the forms found did not thrive well on gelatine, beef pepton-agar-agar was used, and Koch's methods for the most part followed in obtaining cultivations. In 83 per cent. of the secretions examined he found the staphylococcus pyogenes in one of its three forms—*albus*, *aureus*, and *cytreus*—the last, however, more rarely than the two former. Three other forms of cocci were also occasionally found, the most frequent being the micrococcus cereus (Passet), and the other two the coccus of pneumonia (Friedländer), and the streptococcus pyogenes. Besides these cocci, six varieties of rod-shaped bacteria were distinguished. The next point to be determined was, whether all these germs possessed the power of giving rise to suppuration, or whether some were relatively benign in this respect. For this purpose a small pocket-shaped incision was made in the cornea of animals, and a small amount of each pure cultivation introduced into each wound. The result of a number of experiments of this nature was to show that the staphylococcus pyogenes, the most frequently encountered coccus, produced by far the most severe suppurations, although the other

cocci were not inactive. Five of the bacteria forms produced somewhat similar effects, in every case less intense, and in some very much so. One form, the only one which produced spores, was found to be quite innocuous. On scraping the edge of a hypopyon ulcer only bacteria were found, but wherever an opportunity presented itself of examining microscopically sections through the floor and edges of the ulcer, staphylococci were always found congregated in considerable quantity within the enlarged lymph spaces of the cornea. Some of the bacteria, again, found in the tear sac produced marked injection, swelling, and increased secretion when introduced into the healthy conjunctival sac. Panas's assertion that the biniodide of mercury in solution of the strength of 1 to 25,000, or even 1 to 30,000, is an efficient antiseptic, was found by Sattler to be incorrect; but Sattler has recently recommended as an antiseptic lotion for the conjunctival sac 0.01 per cent. of biniodide mixed with 0.02 per cent. of bichloride. This has more powerful antiseptic properties than a 0.03 per cent. solution of the bichloride, and is not at the same time generally irritating to the eye.

A NEW OPERATION FOR PTOSIS.—Of late years several attempts have been made to improve upon the old operation for congenital or paralytic ptosis which merely consisted in removing a fold of skin from the lid. The principle of the operations of Dransart and Pagenstecker is to establish a connexion between the lid and the occipito-frontalis muscle by means of subcutaneous cicatricial bands, got by allowing sutures to ulcerate their way out along their tracks underneath the skin. Panas (*Archives d' Ophtalmologie*, vi. 1, 1866) has found the following operation very successful, and not followed by so much pain and swelling as Dransart's, of which, however, he admits the efficiency. An assistant applies his hand to the patient's forehead to prevent the drawing down of the skin of the lid by which the natural arrangement of the tissues would be interfered with, and the precision of the necessary incisions affected. He first begins an incision along the line of the upper border of the tarsus. This incision is, however, not continued along the whole of that line, but interrupted so as to leave a central portion of $\frac{1}{2}$ inch in extent uncut. A second horizontal incision, with a slight convexity upwards, and not quite an inch in extent, is made in the position of the fold of separation between the eyebrow and lid, and therefore about over the orbital margin. This second incision must involve all the tissues down to the periosteum, and by means of two short vertical incisions be joined with the inner extremity of the external portion and outer extremity of the internal portion of the lower incision. Finally, a third incision is made parallel to the second, and somewhat more than an inch in length, along the upper border of the eyebrow and passing down to the periosteum. The little peninsula of skin and

muscle included between the middle and lower horizontal and the two vertical incisions is next dissected free from the tarsus down to its ciliary border, taking care not to interfere with the suspensory ligament of the lid. The bridge between the middle and upper incisions is then undermined, whilst avoiding periosteum and suspensory ligaments. When this has been done the dissected flap is pressed up underneath the undermined bridge, and attached by three sutures to the upper edge of the upper incision. To prevent the traction on this medial flap producing ectropion, a suture is put in at each side, by which means the conjunctiva and suspensory ligament of the lid are united to the edges of the upper incision. Panas claims in this way to have introduced an operation which meets the indications required by a shortening of the lid to the desired extent by the raising of its tarsal portion, and causing the insertion of the occipito-frontalis muscle to occupy the position and assume the function of the absent or paralyzed levator.

PERISCOPE OF SYPHILOLOGY.

By FRANCIS CADELL, F.R.C.S. Ed.

SOME MOOT POINTS IN THE NATURAL HISTORY OF SYPHILIS.—Abstract of the Lettsomian Lectures, by Mr Jonathan Hutchinson, continued from p. 94.

Relationship of Tertiaries to Secondaries.—As illustrating that these two stages are not so distinct as the older doctrines taught, the following case is cited. A young man, aged 21, too young for it to be likely that he had ever syphilis before, was admitted into the London Hospital. He had still the remains of a hard chancre, and was covered with a papular rash, which was ulcerating in places. He was infected four months previously. He died suddenly. The necropsy showed gummata in both testicles, in the spleen, and in the heart, death having been caused by the softening and ulceration of the latter. Here we have conditions which are usually counted tertiary, occurring before the primary ones have had time to disappear. The exceptional character of this case is only in the circumstance that the patient died, and thus afforded an opportunity for the demonstration of conditions which are probably present, but unsuspected in many others. The gummata of the early period are small and numerous; those of the later one are large, and often few in number, or are single.

The Position of Rupia.—It is a mistake to consider rupia as definitely a tertiary symptom. It almost invariably begins within a year of the chancre, and often much earlier; and if met with later, it is almost always in cases in which it has resisted treatment and lasted for long. The mistake as to its proper position has arisen from a too easy acceptance of the dogma, that everything that

ulcerates is necessarily tertiary. Very often a peculiarity in the diathesis of the patient has been implied by the fact that his chancre inflamed and ulcerated. Thus a scar-leaving eruption often follows a scar-leaving chancre. *Rupia*, as a rule, is not serpiginous; it does not creep at its edges; its crusts, when typical, are always circular.

Syphilitic Lupus.—The most acute and rapidly destructive is what has been termed erosive lupus, an almost phagedænic affection, which usually attacks the nose, and which is more frequently seen in inherited than in acquired syphilis. We have the most varying degrees of severity in syphilitic lupus. As a rule, all lupoid affections of the skin rank as tertiary; and it would scarcely be too bold a generalization to say that all the tertiary affections of the skin are of a lupoid character. By this is meant that all are serpiginous, all unsymmetrically arranged, and that all leave scars.

Periostitis.—Are not all nodes necessarily tertiary? If by a node is meant a local periosteal swelling, most certainly they are not. The periostitis of the tertiary period differs much in its tendencies from that of the secondary; it is more lasting, more apt, on the one hand, to end in softening, and, on the other, in permanent sclerosis. The periostitis in the early stage is, for the most part, a transitory and easily curable process; whereas, eight or ten years later, another form may be expected which will produce much more conspicuous and lasting lesions.

Other Maladies which are considered Tertiary, often of Early Occurrence.—Lesions of the nervous system often occur within the first year. Neuro-retinitis almost always occurs early. When that terrible form of inflammation of the internal ear, which leads to absolute deafness, occurs, it is always about in the same stage of the malady as the inflammation of the eye; that is, in the second half of the first year. The existence of multiple gummata of the choroid may sometimes be demonstrated within the first eighteen months. From such demonstrations we may infer the kind of changes which may happen at the same stage in other tissues of the same order,—such, for instance, as the pia mater. Mr Hutchinson believes that many of the diseases just mentioned would probably occur much earlier in the evolution of constitutional syphilis, were it not for the antidotal and retarding effects of mercury. It is impossible to classify secondary and tertiary symptoms into two groups with reference to the tissues that are attacked. There is no lesion which may not happen, and no tissue which may not be attacked during the secondary stage. Many things are omitted in the tertiary stage which are common in the secondary; but few, indeed, are the conditions met with in the tertiary which have not found their representatives in its predecessor. This fact supplies important evidence in favour of the belief that the tertiary symptoms stand in relation to the secondary often in the place of

relapses—that is, of a recrudescence of morbid process in tissues which had been damaged at a former period. A patient who has had syphilis is to be regarded as having all his tissues damaged, their power to repair interfered with, and their liability to take on processes of chronic inflammation, ending in atrophy or sclerosis, definitely increased. The author concludes that syphilis is a very important predisposing cause of locomotor ataxy. There is a cognate malady, ophthalmoplegia externa, in which central changes, at first inflammatory and then atrophic, cause paralysis of the external muscles of both eyeballs. It curiously happens respecting this affection, that in almost all the cases on record there was a clear history of preceding syphilis, and in some very definite results were obtained from specific treatment.

Influence of Mercury as an Antidote.—Mr Hutchinson's practice is to give one grain of gray powder three to six times daily, and seldom for a shorter course than six months in the first instance. If the rash have already made its appearance before the treatment is commenced, as a rule it quickly fades; and so long as the patient continues the remedy he remains free. The exceptions to completeness of freedom concern chiefly the mouth and throat. If, however, at the end of this time the remedy is stopped, in many cases a very remarkable proof of its antidotal efficacy will occur. It will be found that it was it, and it alone, which had held the poison in inactivity. Within a few weeks of its suspension, a mild erythematous or lichenoid eruption shows itself. Although it may now and then be papular, he has never seen it approach in severity the eruptions which are often seen in cases which have not been treated. There is, however, another very peculiar eruption which sometimes persists for a long time, and recurs over and over again. Mr Hutchinson calls it the "after bath eruption," as it only appears on the exposure of the body to cold. There is a very severe form of rupia, in which the ulcerations coalesce over large surfaces, and the crusts then lose the typical limpit-shell form. Two cases illustrating this severe form are given where the early symptoms were mild, and had for some time subsided before the rupia showed itself. These two cases are contrasted with some in which very mild eruptions appeared on the disuse of mercury after the prolonged use of small doses. Under the latter conditions, the eruption, although of common occurrence, is never severe. After short courses, especially if attended by salivation and sudden complete stoppage of treatment, these severe recurrences are not, he thinks, very rare. They suggest the inference that the poison is in some way retarded in its development by the antidote, but that it is not destroyed, and that it possesses the power after a rest of still displaying its utmost rigour.

(To be continued.)

Part Fifth.

MEDICAL NEWS.

ROYAL COLLEGE OF PHYSICIANS, EDINBURGH.—The following gentlemen passed their final examination for the qualification in Medicine at the sittings held on 9th July 1886, and were admitted L.R.C.P. Ed.:—Thomas Grant Longhorne, London; John Thomas Hutchinson, Easington, Co. Durham; George John McCoull, Prudhoe on Tyne; Michael Lyons Butler, Portobello.

JOHN HERN, M.D. Edin., M.R.C.S., has been appointed Ophthalmic Surgeon to the Darlington Hospital.

THE visit to Edinburgh of Dr Oliver Wendell Holmes, after an absence of 52 years, is an event that will not be readily forgotten by those who were privileged to see and hear the "old man eloquent." It is not likely that many remain among us who can recall the former visit of the young and unknown doctor to the school of Alison and Syme, with whose personalities he found himself so much impressed. But there are few who have not made acquaintance with the delightful autocrat, professor and poet, whose writings, radiating from "The Hub," have drawn many men's hearts to him, and awakened the desire, which to some has now been gratified, of seeing him in the flesh, and hearing from his own lips some of those quaint sayings, full of kind and tender wisdom, that have charmed so many readers. The University, in honouring Dr Holmes by conferring upon him its LL.D. degree, has honoured itself and its graduates, but the most pleasing feature of the visit was the presentation of the address from the Student's Representative Council. Prof. Crum Brown made a graceful chairman, and several of the professors and their assistants occupied the platform, but the meeting was essentially a students' meeting, and Dr Holmes was their guest. The felicitous autobiographic sketch in which he replied to the presentation of the address must have impressed many of his young hearers, and may perhaps have given them larger and better views of their profession and life-work than they had before. It indicated what many of us are somewhat prone to forget, that Dr Holmes has been, and still is, one of us, a medical man proud of his profession, as well as a distinguished man of letters.

"THE BLOT UPON THE BRAIN."—It is interesting to know that Dr Ireland's work, "The Blot upon the Brain," which we had pleasure in recommending to our readers last November, is being translated into French by Dr Edgar Bérillon of Paris, and will be published in a few months. Arrangements have also been made for a German translation of the book. It is, however, significant

to note that the circulation of the "Blot" has been prohibited in Russia. This is no doubt owing to the chapter on the hereditary insanity of the Romanoffs, and the historical illustrations about the harm insane monarchs have caused to their subjects.

A LITTLE LEARNING IS A DANGEROUS THING.—The smart young lady who wrote a note to the doctor asking him to visit her brother, and bring his urethra with him, has been discounted by a well-informed medical student of Indianapolis, who was recently asked by his sweetheart to examine her throat for some slight ailment. Being anxious to exhibit his embryonic medical talents to his fair innamorata, he called for a spoon, dexterously depressed her tongue, gazed knowingly into the yawning chasm thus brought into view, and then, with a look of profound wisdom, informed her that *her vulva was greatly elongated*.—*Journal of Cutaneous and Venereal Diseases*, March 1886.

CONGRÈS FRANÇAIS DE CHIRURGIE.—La deuxième session du Congrès français de Chirurgie se tiendra à Paris cette année du 18 au 24 Octobre. La séance d'ouverture aura lieu le Lundi 18 à 2 heures, dans le grand amphithéâtre de l'École de Médecine. Vous êtes instamment prié de prendre part à cette session. Le succès du premier Congrès, malgré les lacunes inhérentes aux débuts d'une pareille entreprise, nous permet d'espérer de cette seconde réunion des Chirurgiens français les plus heureux résultats pour les progrès de la chirurgie dans notre pays. En outre, la collaboration de plusieurs savants étrangers de langue française nous est assurée et nous est particulièrement précieuse. Quatre séances seront consacrées à des questions mises à l'ordre du jour, trois au moins aux questions diverses. Questions mises à l'ordre du jour: 1. Nature, pathogénie et traitement du tétanos; 2. De la néphrotomie et de la néphrectomie; 3. Des résections orthopédiques; 4. De l'intervention opératoire dans les luxations traumatiques irréductibles.

CORRESPONDENCE.

To the Editor of the Edinburgh Medical Journal.

"AN UNSUCCESSFUL CASE OF ALEXANDER'S OPERATION."

LIVERPOOL, July 1886.

In the July issue of this Journal (page 55), a short paper appears by Mr Skene Keith under the above title. The present paper is chiefly a criticism of that case, but in the criticism some useful hints will be found that may, I hope, ensure to the inexperienced

more success than appears usually to fall to their lot in the first performance of a useful but delicate operation.

The "unsuccessful case" seems to have been one quite suitable for complete and permanent relief by the round ligament operation. It was probably one of retroflexion, as the fundus uteri lay on the pelvic floor, and in which a stem pessary would be necessary. We will take for granted that this instrument as well as the Hodge was inserted, and that the ligaments were pulled out the necessary length, but all details are conspicuous by their absence, and several causes of non-success may have existed besides these two just referred to, either of which are fatal to success.

Then comes the statement that the operation "was done exactly as described by Dr Alexander, except that the slack of the ligaments was cut off and not packed in the wound." I object very strongly to the operation being called "Alexander's," where a modification is persisted in that I have already denounced in very strong language in this Journal a few months ago, and where I foretold the failure that took place in this case.

The essence of the operation consists in shortening the ligaments sufficiently, in securing a perfect and extensive union in the new position, and in maintaining the uterus erect until the ligaments have united and the elastic recoil of the displaced womb is destroyed, and the organ has no tendency of itself to leave the new position.

When the ligaments have been extricated, the first inch is frayed more or less and may be removed, but there remain two to three good inches, clean and glistening, ready to adhere to the wound. Why cut this off, and leave as the only chance of success the attachment of the extreme end of the ligament with the pillars of the ring? By leaving all the unchafed slack in the wound, union can hardly fail to occur; by cutting it off failure is imminent. In fact, I look upon the suturing of the margins of the external abdominal ring rather as a preventative of hernia than as the chief point of adhesion of the shortened ligaments.

What was the cause of the failure? The operator ascribes it to stretching of the shortened ligaments. I unhesitatingly ascribe it to non-union of the cut ends of the shortened ligaments, and for the following reasons. There was evidently more wound disturbance than should have taken place, for the patient lay in bed five weeks, and she suffered less general disturbance after the laparotomy than after the round ligament operation. Constitutional disturbance should be, and generally is, entirely absent in the latter. Again, stretching of the ligaments is a gradual process,—at any rate, the work of months. In this case, five weeks after the operation, there was a slightly exaggerated forward curve; the patient then got out of bed, and in four weeks the womb was pressing against the pessary. In fact, as soon as the patient got up and went about, the ends of the ligaments slipped back from their frail attachments.

A ring pessary was then applied that did not support the fundus, and at the end of a fortnight the uterus lay in the old position of "retroversion." I say deliberately, from a very extensive experience, that in a simple case such as this was, so rapid a change of position from mere stretching of the ligaments was absolutely impossible.

We next come to the usual generalizations from a single failure that I am now so familiar with.

"The great objection to Alexander's operation seems to be, that one has no guarantee that the ligaments which stretched once may not stretch again."

The only guarantee that they will not stretch to any practically disadvantageous extent after operation is practical experience, and I have had loads of it. I have yet to meet with a case of retroversion or retroflexion where satisfactory union occurred, and where a recurrence of the retroversion took place. I have met with three where a tendency to recurrence took place when the pessary was removed, and in these a light Hodge has still to be worn. But such cases only amount to about 2 per cent.

But it is said these ligaments have stretched once. I would like some guarantee of the truth of this statement. I have now examined many thousand round ligaments in the post-mortem room, and in all cases, from the age of puberty upwards, these structures sweep round the pelvis in an ample curve of sufficient length to allow the uterus to be displaced backwards right through the sacrum, or to prolapse completely without any restraint from them. In the cadavers of virgins, primipara, and multipara, I have pulled out the usual three to four inches of slack, showing that stretching either occurs in all or in none. No uterus ever fell backwards through mere stretching of the round ligaments. What their exact physiological function may be is unknown. It is more to the point that we can utilize them to fix a displaced uterus more securely in a normal position than ever it was before. Surgeons have only to set to work to acquire the genius of the operation, and to recognise the sources of failure. These are, pulling out the ligaments insufficiently, sloughing and non-union of the ligaments, elastic recoil of the uterus unprevented by a suitable stem pessary, and the introduction of specious innovations into the performance of the operation that are destructive of its aim. I look upon the operation as an easy and most effectual one, but I have never yet heard of any new operation in which so many experienced operators have failed, nor one which so many general practitioners have tried to their extreme disappointment and that of their patients. There are several in Liverpool who can do it. In New York the operation is in full swing, and in Paris it is progressing satisfactorily. As an American surgeon, Dr Hanks, observed to me the other day, "your operation will have to be done by specialists, the general operator cannot perform it satis-

factorily or safely." I am reluctantly compelled to accept that conclusion, as I have heard now of a great number of men who have been so disgusted with their first attempt that they will never try it again.

In publishing the results of unsuccessful cases, I think it is absolutely necessary to give the fullest details. In the case under criticism no details are given, and the general tenor of the statements are directed to prove that the operation is one inherently bad, and essentially doomed to failure—any other conclusion can only be obtained by reading between the lines.

And now a word as to the sequel of the case. *The woman was finally cured by the removal of her healthy ovaries and Fallopian tubes*, an operation previously contemplated, but pregnancy then barred the way. I have never yet seen a case of retroflexion or retroversion, and I have seen many very bad ones, where such a remedy was ever imagined as a possible ultimatum. If Edinburgh surgeons would but learn to do the round ligament operation, as they can do other operations, we would never hear of the necessity for laparotomy in such a case again.

WILLIAM ALEXANDER.

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Part First

ORIGINAL COMMUNICATIONS.

I.—CASE OF A FULL-GROWN MALE FŒTUS, EXHIBITING THE RARE MALFORMATION OF A CYCLOPS.

By WILLIAM CRAIG, M.D., F.R.C.S. Ed., F.R.S.E., Lecturer on Materia Medica, Edinburgh School of Medicine.

WITH AN ANATOMICAL DESCRIPTION OF THE PARTS.

By JOHNSON SYMINGTON, M.D., F.R.C.S. Ed., M.R.C.S. Eng., Lecturer on Anatomy, Edinburgh School of Medicine.

(Read before the Medico-Chirurgical Society of Edinburgh, 2nd June 1886.)

At the first meeting of the present Session I showed to the members of the Society a full-grown fœtus presenting several malformations, the most remarkable of which was that known as a "cyclops." At the same time, I mentioned that I intended to have the parts carefully examined, and that a full description would be presented to the Society afterwards. The present communication is the fulfilment of that promise. The child was born three days before it was exhibited to this Society, and the members had an opportunity of examining the body when quite fresh.

There is not much to record regarding the obstetric history of this case. The parents were strong and healthy, and came from the country to reside in Edinburgh several years ago, and have since enjoyed excellent health. The mother is 45 years of age, and had previously six children, all of whom were natural and healthy. The youngest child is six years of age.

The presentation was a footling one, and there was an excess of *liquor amnii*, a condition of matters in my experience frequently associated with malformations of the hydrocephalic type. The labour was of short duration, and immediately on the completion of the birth of the child I discovered the peculiar malformation of a cyclops. The child was a male, with a well developed body, but the cranium was evidently somewhat imperfectly developed. The child was born alive, and it was fully twenty minutes before muscular movements entirely ceased. As it was evident that the child was truly "non-viable," I made no special efforts to prolong its existence, but it got every opportunity of living had that been possible. I do not believe that it was possible for this child to

maintain a separate existence out of its mother's uterus. The mother made an excellent recovery.

This peculiar malformation is one, fortunately, very rare in man. I believe there is not a specimen in any museum in Edinburgh, although, as I have learned from Dr Symington, there is a similar specimen in the Anatomical Museum of the University of Glasgow, and several other cases have been recorded. It is more frequently met with among the lower animals, especially amongst sheep.

Believing that it was desirable in the interests of science that a careful description of the various abnormalities present in this foetus should be furnished, I requested my colleague, Dr Johnson Symington, to perform this duty for me, holding strongly that such monstrosities should be dissected only by a skilled anatomist. It has been my lot more than most men to meet with interesting and rare malformations in my practice, and on previous occasions the dissections and anatomical descriptions have been by Dr Symington. I am sure the Society will agree with me when I state that I could not have entrusted this task to better hands; and I am glad to say that he has been enabled to dissect the parts in such a manner that the foetus will still be available for an anatomical museum, and it will be deposited in the Museum of the Royal College of Surgeons of Edinburgh.

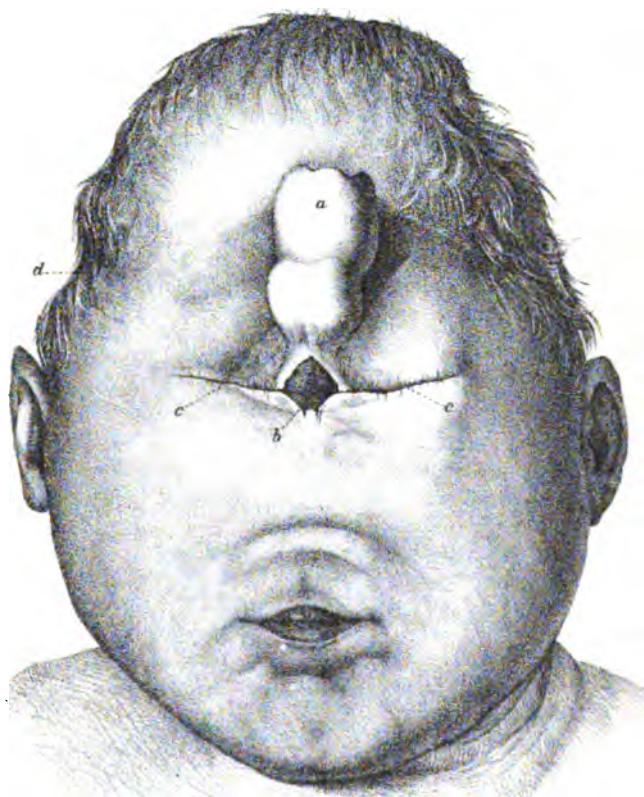
I have only to add further that when born the eyelids were quite closed. No eye was visible, there was only seen a transverse fissure in the centre of the forehead, caused by the apposition of the eyelids.

The following is Dr Symington's Anatomical Description of the Parts.

This specimen was a well-nourished male foetus. It was 19 inches in length, had an ossific centre in the lower extremity of each femur, and, in fact, presented the usual indications of having been born at the full time. In addition to the cyclopean malformation this foetus presented several minor abnormalities. There were six toes on each foot, but the supernumerary one on the right side was very small. The external genitals exhibited a slight tendency to resemble in appearance those of the female, for the fold of integument forming the scrotum passed upwards and inwards, so as to meet in front of the pubes in a somewhat similar manner to that in which the labia majora unite to form the mons veneris. The penis was small, and almost concealed by the above-mentioned fold. The left testicle had descended into the scrotum, but the right one was still in the abdomen.

The external appearances of the face are shown in the Plate, which was made from a life-sized drawing of a front view. The snout, which is represented turned upwards, was freely movable. It was about an inch in length, and was traversed in its whole extent by a single canal, which terminated in front by an opening

DR CRAIG'S CASE OF A CYCLOPEAN FÆTUS.



FRONT VIEW.

a, Snout ; *b*, lozenge-shaped space ; *cc*, fissures between eyelids :
d, constriction above pinna of ear.

at its free extremity. Below the snout there was a small lozenge-shaped space, the lateral angles of which were continuous, with fissures running outwards between the eyelids. The floor of this space was of a reddish colour, and appeared to be formed by mucous membrane, but there were no indications of an eye. The upper part of the head was smaller than normal, and presented a constriction just above the level of the pinna of the ear.

Plate xlvii., fig. 3, of Ahlfeld's *Missbildungen des Menschen*, shows a specimen in which the external appearances were very similar to those in this case. Unfortunately the brain was very soft, so that its exact condition could not be accurately determined; but there was evidently only one cerebral hemisphere, and no indications of a longitudinal fissure. I could find no traces of the olfactory nerve, and there were only a single optic nerve and foramen, but all the other cranial nerves were present. In the dissection of this specimen special attention was directed to the condition of the bones of the skull and the formation of the orbital and nasal cavities. A few of the bones were apparently absent, some considerably altered in shape, and even those of normal configuration were smaller than usual.

The occipital bone consisted of four pieces—a basi-occipital, two ex-occipitals, and a supra-occipital; the latter was inclined more nearly vertical than usual. The squamoso-zygomatic and petromastoid parts of the temporal bone were firmly united together; they were very small, and rather irregular in shape. The parietals were normal.

The frontal consisted of a single piece, and there were no indications of a suture between its two halves. It had two distinct orbital plates, but the ethmoidal fissure between them was very narrow.

The changes in the sphenoid bone were almost entirely confined to its anterior part or pre-sphenoid. The body of the post-sphenoid was well developed. The right great wing was united with it by bone, but the left one was still separated from it by cartilage. The internal pterygoids were united with the great wings. There were no indications of the body of the pre-sphenoid. The lesser wings were ossified, and between them was placed the single optic foramen, which was bounded by the dura mater.

A thin bar of cartilage extended forwards, in the middle line, from the post-sphenoid above the optic foramen to the root of the snout. At the upper part of the base of the snout two rudimentary nasal bones were found. They articulated with the frontal.

As already mentioned, the snout contained a single canal. On dividing the snout close to its base the canal was seen to communicate with two rudimentary nasal cavities. These cavities were surrounded, except in front and above, by a bony capsule. Their roof was formed by the thin bar of cartilage already mentioned, and the dura mater which was perforated by several small

holes. The bone, with the dura mater and cartilage, formed a rounded capsule, which was little more than half an inch in diameter. On vertical transverse section it was seen to contain a mesial septum and two lateral cavities. The septum was well defined and reached to the floor of the cavity, but was not united with it. The outer wall of each cavity contained some irregular spaces which might be regarded as rudimentary ethmoidal sinuses. The septum, as well as the outer walls of the nasal cavities, was well ossified. The two superior maxillary bones were firmly united with one another, and both of them were devoid of nasal processes. There were no indications of pre-maxillary bones, and their absence was confirmed by an examination of the teeth as there were no incisors, each superior maxilla containing only three milk teeth—a canine and two molars. Behind the superior maxillary bones were found the palates, which were united with one another and with the maxillary bones. They were considerably altered in shape, and besides forming part of the hard palate, they extended upwards behind the bodies of the superior maxillæ to form the posterior part of the floor of the orbital cavity. The malars were normal, but no traces of the vomer or lachrymals could be found. The two halves of the lower jaw were separable, and contained the normal number of teeth. The single orbital cavity was bounded above by the frontal, below by the superior maxillæ and palates, and on each side by the malar and great wing of the sphenoid.

The optic nerve divided soon after entering the orbit into two branches, which were connected with two rudimentary eyeballs. The sclerotic and choroid of each eye were distinct, but the cornea, pupil, and lens could not be detected.

The part of the pharynx lying above the level of the soft palate reached as usual to the lower surface of the basi-sphenoid, but anteriorly it was bounded by the united palates, and there were no posterior nares.

From the above description it is evident that this specimen differs from the classical cyclops, since it had two eyes placed one on each side instead of a single mesial eye. Still it is really a well-marked example of the group known as cyclopean monsters. The malformation of the eyes is only one out of a series of defects found in these cases, as there is always imperfect development of the parts derived from the anterior cerebral vesicles, and extensive changes in the condition of both the cranial and the facial portions of the skull. The condition of the organ of sight varies considerably; in some cases there are two distinct eyes; these may be partially or completely fused into one, and in the most marked specimens the eyes are completely absent. I have not met with any description of dissections of human cyclops in which the nasal organ was similar to that in this specimen. The absence of the pre-maxillary bones and the upper incisors is what one might expect, but it is not often noticed. The tendency of the bones to early union in

the mesial plane was well shown in the superior maxillæ, as notwithstanding the absence from the palate of the pre-maxillæ, those two bones were firmly ossified together, and there were no indications of any notch in the anterior part of the alveolar arch.

II.—UNIFORMITY IN OBSTETRICAL NOMENCLATURE.

By ALEXANDER RUSSELL SIMPSON, M.D., F.R.S.E., Professor of Midwifery and the Diseases of Women and Children in the University of Edinburgh.

(Communicated to the *Edinburgh Obstetrical Society*, 12th May 1886.)

AT the meeting of the International Medical Congress in London in 1881, I made a suggestion as to the desirability of attempting to obtain some degree of uniformity in the use of various terms in obstetric teaching and literature. The proposal was favourably received, and a committee was nominated, consisting of members of different nationalities, who were to consult with committees of their compatriots, and report to the subsequent Congress.

At Copenhagen, although I was only able to report one meeting of the International Committee without definite result, the subject was still deemed of sufficient importance to be referred back to the committee, in the hope that further interchange of ideas might be made so as to furnish a report which should form a basis for full discussion and final decision in the International Congress to be held in Washington in 1887.

I think it will be well to submit the subject first of all to such a Society as this, and the object of this brief communication is, 1, to lay before you some of the points on which it seems to me desirable to seek for uniformity; and, 2, if we find that we can come to a common understanding regarding them, to propose that we should send them in the form of a circular letter to the various teachers and authors on Midwifery in Great Britain and Ireland, with the hope of ascertaining their views on the subject. It might run somewhat as follows¹:—

Do you consider it desirable to try to attain uniformity in obstetrical nomenclature?

Do you consider it possible to arrive at uniformity of expression in regard to—

- I. The Pelvic Diameters?
- II. The Diameters of the Fœtal Head?
- III. The Presentations of the Fœtus?
- IV. The Positions of the Fœtus?
- V. The Stages of Labour?
- VI. The Factors of Labour or any other topics?

Are you prepared to adopt the following definitions and designations? or what modifications of them would you propose?

¹ I now give the suggestions modified in accordance with criticisms made by the Fellows of the Society, and in the form in which it was finally agreed to circulate them.

I. PELVIC BRIM DIAMETERS.

1. Antero-posterior: between the middle of the sacral promontory and the point in the upper border of the symphysis pubis crossed by the *linea terminalis* = *Conjugate Diameter*, C.D.

2. Transverse: between the most distant points in the right and left ilio-pectineal lines = *Transverse Diameter*, T.D.

3. First oblique: between right sacro-iliac synchondrosis and left pectineal eminence = *Right Oblique Diameter*, R.O.D.

4. Second oblique: between left sacro-iliac synchondrosis and right pectineal eminence = *Left Oblique Diameter*, L.O.D.

II. DIAMETERS OF FŒTAL HEAD.

1. From tip of the occipital bone to the centre of the lower margin of the chin = *Occipito-mental*, O.M.

2. From occipital protuberance to glabella = *Occipito-frontal*, O.F.

3. From a point midway between the occipital protuberance and the foramen magnum to the centre of the anterior fontanelle (*bregma*) = *Sub-occipito-bregmatic*, S.O.B.

4. Between the two parietal protuberances = *Bi-parietal*, Bi-P.

5. Between the two lower extremities of the coronal suture = *Bi-temporal*, Bi-T.

DEFINITION OF PRESENTING PART: OF OCCIPUT, SINCIPUT, AND VERTEX.

The *Presenting Part* is the part which is during labour bounded by the girdle of resistance or girdle of contact. The *Occiput* is the portion of the head lying behind the posterior fontanelle; the *Sinciput* is the portion of the head lying in front of the bregma; the *Vertex* is the portion of the head lying between the fontanelles.

III. PRESENTATION OR LIE OF THE FŒTUS.

1. Longitudinal—

(1.) Cephalic, including
Vertex and its modifications;
Face and its modifications.

(2.) Pelvic, including
Breech;
Footling;
Knees.

2. Transverse or Trunk, including

Shoulder or Arm and other rarer presentations.

IV. POSITION OF THE FŒTUS.

1. Left (L.)	{ Occipito- (O.) Mento- (M.) }	{ Anterior (A.) Posterior (P.) }
2. Right (R.)	{ Sacro- (S.) Acromio- (A.) }	{ Posterior (P.) Anterior (A.) }

V. STAGES OF LABOUR.

Labour to be divided into three stages.

1. First Stage—from the commencement of effective pains till complete dilatation of os externum = *Stage of Dilatation*.

2. Second Stage—from dilatation of external os till complete extrusion of child = *Stage of Expulsion*.

3. Third Stage—from expulsion of child till the complete extrusion of placenta and membranes = *Stage of the Afterbirth*.

VI. FACTORS OF LABOUR.

1. Powers.
 2. Passages.
 3. Passenger.
-

III.—A RECORD OF TWO HUNDRED MIDWIFERY CASES
IN ST CUTHBERT'S POORHOUSE.

By FRANCIS W. MOINET, M.D.

Of these 200 cases 134 were unmarried and 58 married women, and 8 were widows, which means that in 142 cases at least, or 71 per cent. of the children were illegitimate. At least, because a number of the children of the married women were also illegitimate, although, of course, not so easy of proof.

The number of children born was 203, namely, 107 female, and 96 male children, there being three cases of twins. The presentations were 192 head, foot 4, breech 4, forehead 1, head and cord 1. To aid delivery the short forceps were applied in four, and the long forceps in six cases, and in one the head had to be perforated. Of these ten forceps cases nine were first pregnancies and one a third, eight of the children so delivered were born alive; of the other two, one had been dead for two or three days before delivery, and the other, being the head and cord presentation, was dead before I arrived to apply the forceps. Two cases of the 200 were complicated by convulsions on the part of the mother, one due to renal disease, the other to epilepsy; both made good recoveries, although the first of them remained unconscious, with occasional convulsions, for three days after delivery. The children of both were born alive, one with the aid of forceps, and did well. Out of these 200 cases only one mother was lost, by sudden and violent hæmorrhage from a partially adherent placenta—so sudden and violent that the patient was dead before the nurse could administer brandy while she sent for assistance. Sixteen children were lost; of these nine were first pregnancies, five were second, one a third, and one a fourth. Of these still-born children, six were premature, several had been dead for some time before delivery due to syphilis, one was a twin, one the

head and cord presentation, and one the case of perforation—the last two being the only ones in which the death of the children was directly due to the labour. The mortality thus being of the mothers $\frac{1}{2}$ per cent., and of the children 1 per cent., that is directly due to the labour, but 8 per cent. of the children from all causes. As might be expected, assistance to delivery was required more frequently in first pregnancies; and the greater proportion of still-born children were also the result of first pregnancies. The presentations in these cases were twelve head, one breech, and one foot case.

It is also interesting to notice the average ages of the mothers, and the respective number of pregnancies. Thus:—

			Average age of Mothers.
80 children were 1st cases.			22.13 years
48	"	2nd "	24.8 "
20	"	3rd "	26.4 "
8	"	4th "	28.1 "
13	"	5th "	31.5 "
15	"	6th "	30.4 "
5	"	7th "	33 "
3	"	8th "	32 "
4	"	9th "	34 "
1	"	10th "	33 "
1	"	11th "	39 "
1	"	15th "	42 "
1	"	18th "	44 "

The actual ages show that the most prolific period is between the ages of 18 and 25 years. Ninety-six children being of parents whose ages are within this limit. Eight children being born of mothers under 18 years of age, 12 of mothers aged 18, 9 of mothers aged 19, 14 of mothers aged 20, 11 of mothers aged 21, 13 of mothers aged 22, 15 of mothers aged 23, 11 of mothers aged 24, 11 of mothers aged 25. The youngest mother was 14 years of age, and the oldest mother of a first child was 38.

But the fact of most importance is, I think, the low mortality among the mothers, especially when we take into account the adverse influences, mental and physical, so frequently affecting them. Some being prostitutes of the lowest grade, entailing disease, hardship, and exposure. Some deserted wives, who have endured to the last, but for the sake of their children have been reluctantly compelled to seek shelter in the poorhouse. Others seeking concealment of their shame, or having been driven from their homes as a disgrace to their families.

These depressing influences, however, do not appear to increase the danger of childbed to the mother, although in the case of the children syphilis was evidently the cause of the death of several. The reason of this is probably that the want of tone, as is some-

times found in the case of mothers debilitated from other causes, is conducive to easy deliveries. Another, however, and equally important reason is, as little interference as possible during labour, but allowing nature as much time as is compatible with safety to complete her work, light but nourishing diet, quietness and good nursing. And as to disinfectants, I have found Cond's fluid as a local application much more satisfactory than carbolic acid; it is more thorough and prompt in its action, can be freely used, and is non-irritant. During the sixteen years I have been Medical Officer to St Cuthbert's there has not been one case of puerperal fever, which makes me inclined to believe that the cause of this dangerous disease is in many cases not from within, but from without, and that the safety of the mother is better secured by separation than aggregation, and by the least possible interference by nurses, students, or the medical attendant.

IV.—THE RELATION OF GOITRE TO MENSTRUATION AND PREGNANCY, AND THE INFLUENCE OF THE SYMPATHETIC NERVOUS SYSTEM ON ITS PRODUCTION.

By ALLEN THOMSON SLOAN, M.D., Edinburgh.

(Read before the Medico-Chirurgical Society of Edinburgh, 5th May 1886.)

THE mere fact that goitre occurs much more commonly in women than in men would lead us to suspect that an intimate relation exists between the thyroid gland and the female generative organs.

In this country it is rarely met with in the male sex. Out of about 50 cases seen by me, 4 only occurred in men—1 in Penrith, 1 in Wishaw, 1 in Carlisle, and 1 in London. This proportion is even greater than that noted by other observers in England. In Hampshire County Hospital, in a period of ten years, of the 49 cases treated, all, with one exception, were women. In Chichester Infirmary Dr Forbes informs us that out of 70 patients only 2 were males. At Bishopton Grange, near Ripon, Dr Inglis, out of 111 cases, found that 6 only occurred in men; while Prosser, in Derbyshire, saw 50 cases, and none of these in man or boy. In Germany the proportion of males affected is usually given as about 15 per cent.; but at Salzburg Zillner found that of 96 men and 184 women in adult life in the public charitable institutions 21 per cent. of the men and 61 per cent. of the women were affected with goitre. In Switzerland and some parts of India, where the disease is more prevalent, the number of males affected is greater. Mr Greenhow was of opinion that sex had no great influence on the disease, and Mr Bramley found it as common in men as in women. These Indian observers also found that goitre occurred at any age—was sometimes congenital, or affected children of

tender years—but that it was most common between 20 and 40, though even in old age goitrous tumours had been known to develop.

Dr M'Clelland thought that no authentic case of congenital goitre had ever been recorded, but that the disease began at any period of life after the age of three years, and never arrived at its full size sooner than six years from the time of its commencement, but generally was much slower,—its progressive augmentation seldom becoming perfectly suspended during residence in an affected village. In this country goitre is said to occur chiefly between the ages of 17 and 24, and to be rare before puberty. Though 9 out of my 30 recorded cases occur in young girls under 17, and a few of the others describe the disease as commencing a year or two before the onset of menstruation, still the majority assert that simultaneously with the development of that function the thyroid was noticed to increase in size, and all agree that about this time growth seemed more rapid. In five of my Penrith cases the patients themselves or their friends have observed distinct enlargement of the goitre during the menstrual periods; but the others are doubtful that any change takes place, though most of them complain of an increased sensation of fulness in the neck, and greater breathlessness, which afterwards passes off. Enlargement of the thyroid gland is also common enough at this time without disease. Dr Inglis says, "it is at puberty that goitre generally commences;" and accounts for this by supposing that a surplus of blood is thrown into the thyroid in consequence of the diminution of the thymus gland, which occurs at this period of life. From his own observations, he found that in by far the greater number the disease had commenced at or about the time when the catamenia ought to have appeared; and, generally speaking, his patients had been irregular, the menstrual flow not having appeared till between the sixteenth and nineteenth year (*Treatise of English Bronchocele*.) In my experience, enlargement of the thyroid seems more associated with an early rather than a delayed onset of menstruation.

According to Dr Reid, irregularity of the menstrual function has a very marked effect upon the complaint; and the majority of young females he saw with goitre were subject to some such irregularity (*Edin. Medical Journal*, 1836, p. 54).

Dr Copland has seldom met with an instance in the female unconnected with some kind of irregularity in the catamenial discharge or disorder of the uterine functions; and he never saw a case in which the disease made its appearance before the period of commencing puberty (*Watson's Practice of Physic*, p. 798).

Dr Hunter says "that the bronchocele frequently appears two or three years before or after the commencement of menstruation, and that it sometimes spontaneously disappears when it goes on in a regular manner" (*Cooper's Surg. Dict.*, p. 238).

Suppression of the menses has been thought to act as an excit-

ing cause of goitre, and a case is related by M. Brun, where, on the restoration of these, the tumour disappeared.

Dr Heath, of Torquay, records a case where a cystic tumour developed in connexion with the thyroid gland. Its first appearance was coincident with a suppressed menstrual period, and it suddenly disappeared on the resumption of that function the following month (*Brit. Med. Jour.*, 1879, p. 428).

Cases also are recorded where goitrous tumours previously of considerable size have grown smaller when the menstrual flow has become fully established and regular.

Dr E. W. Jenks, of Chicago, maintains the view that goitre has a close relation with the diseases of the female generative organs, for the following reasons:—"Goitre is less frequently met with in men than women, the proportion given being 26 to 474. It first appears generally at the time of puberty; and the thyroid gland, whether diseased or not, often enlarges at the time of menstruation. He believes that goitre is due to some derangement of the female generative system, the derangement being oftener functional than structural" (*Brit. Med. Journal*, 1881).

Sudden cessation of other discharges, such as leucorrhœa and gonorrhœa, are said to have been followed by swelling of the thyroid. Vicarious menstruation has even been reported to have occurred from the neck. Be this as it may, enlargement of the thyroid gland seems occasionally to be associated with disordered uterine function, and not unfrequently disappears on this organ regaining its healthy action.

Relation to Pregnancy.—In those cases where the goitre does not develop at or near the time of commencing menstruation, it not uncommonly appears during pregnancy; and all my married patients observed considerable increase in the size of the tumour at this period. In countries where goitre is endemic, pregnancy is one of the chief causes which favour its formation. According to Foderé, women who are not goitrous before marriage often become so in time of pregnancy. "During this epoch the sex in general is exposed to a swelling of the neck. In dry countries after delivery it returns to its normal state, but remains enlarged in goitrous countries" (*Traité du Goître et du Crétinisme*). M. Guizot has observed hypertrophy of the thyroid taking place in pregnancy, quite independently of the conditions usually considered to be favourable to the production of goitre. He records two cases which ended fatally, and the post-mortem examination showed great increase of the fibrous framework of the thyroid. "Supposing this to be a correct representation of what takes place in other cases of enlargement of the thyroid during pregnancy, the author is disposed to regard it as only one of the manifestations of the excessive production of fibrine during pregnancy. To this is in great part due the progressive development of the uterus and mammary glands, and there is a simul-

taneity of production between these and the thyroid; and this is why he has been led to state that the hypertrophy of the thyroid during pregnancy is one of the consequences, as it is one of the proofs, of the energy imparted to the fibrous elements of the system" (*Archives Générales*, 521).

Dr Inglis states "that the greatest number of his patients noticed considerable increase of the tumour during pregnancy; and considers this to be due to the sympathy existing between the different organs, the uterus and mammæ, and perhaps also the thyroid, which even through the medium of the mammæ might be ready to receive morbid impressions" (*Op. cit.*)

The relation of goitre to pregnancy, and the marked effect that activity of the uterine functions seems to have in producing enlargement of the thyroid gland, are strikingly illustrated in the history of many of my cases, a few of which I shall now relate.

CASE I.—Mrs H., aged 63, married, and has had four children, has a goitre, which began when she was about 21 years of age in the centre of the neck, and occasionally gave rise to aching pain, relieved by tight pressure of the hand. Menstruation occurred before she was 13, and the swelling increased very slowly from the time of commencement to the time of her marriage at 34, and then it was about the size of a pigeon's egg. During this period it was from time to time painted with iodine, and once or twice it nearly disappeared. Patient thinks there was no perceptible difference during the menstrual period; but whenever she became pregnant the goitre began rapidly to increase in size, until after her first labour it occupied the whole of the front of the neck, extending quite up to the ears. Patient states it was so large that she could not turn her head, and she had to lie and be fed. During the puerperal period it was painted with iodine, but at one part began to inflame, causing intense pain till it burst, when relief was got. It was also lanced, and from it sanious matter, not pure pus, was discharged, enough to fill a breakfast cup. After this it all disappeared except a small oval tumour the size of a walnut; and it remained small till patient became a second time pregnant, when it again rapidly increased in size, though it did not attain the dimensions it had at her first labour. It was kept reduced by assiduous painting with iodine; but in spite of this, during each succeeding pregnancy it increased rapidly in size. Her last child was born when she was 43 years of age, and she passed the climacteric three years afterwards. Patient states this caused no special diminution in the size of the swelling, which, however, was kept down by the constant application of iodine. Now the neck is occupied by an irregularly rounded swelling, the size of a large cocoa-nut, though at one time it was like three eggs, the lobes being quite distinct. The original distinction is still apparent in the greater softness of the lobes over the isthmus. The latter is

very hard and resistant—in fact, in some parts quite calcareous, as if a deposit of lime had really occurred. Evidence of old inflammation is found in adherence of the centre of the swelling to the upper border of the sternum and the sterno-mastoids on each side, which are considerably atrophied by pressure. The goitre produces no interference with swallowing or breathing, but causes an aching pain on the right side, which is relieved by firm pressure and the use of iodine. Both pupils are dilated, but there is no prominence of the eyeballs. Patient being thin, and the goitre somewhat pendulous, she supports it by wearing a small flannel bag round the neck, fixed by tapes behind. Patient has been resident in Cumberland for eighteen years, but the goitre began when she was in Liverpool. Afterwards she travelled about as ladies'-maid, so that local causes cannot account for its production. No relation of any kind was ever affected by the disease, and all her children are quite free from any enlargement of the thyroid. The above patient is an exceedingly intelligent woman, and along with her own case she gave me an account of one in a great friend of hers. This was a woman of the same age, also living in Liverpool, who developed a goitre of the same size at the same time. This was ascertained by measuring and comparing each other's necks. This patient got married at the same time, but "*had no children*;" and throughout the whole of her married life the goitre did "*not*" increase specially in size, but retained its original dimensions till the climacteric, after which it considerably diminished.

CASE II.—A. S., aged 46, married, and has had five children, noticed her neck begin to swell when she was about 20 years of age, though menstruation began when she was 13. Even when the goitre first appeared it occasioned much breathlessness, and patient had often to rest going up a hill. She was married when 23, and a year after began to bear children. The goitre increased in size each successive pregnancy, though it diminished after labour, till at her last pregnancy it was so large, and occasioned such breathlessness, that several times she nearly died from dyspnoea, and her noisy breathing could be heard all over the house. Patient distinctly states that the swelling grew larger during each menstrual period, though, as she is now passing the climacteric, lately it has remained of the same size. There is now a general thickness of the neck of a very diffused character, the three lobes of the gland having all run into each other, and no part being larger than the rest. It still occasions great breathlessness on exertion and excitement. Patient otherwise has been very healthy. Her mother had a goitre, but none of her four sisters suffer from the disease, patient being the oldest daughter.

CASE III.—M. C., aged 45, married, and with four children, suffers from a very large goitre affecting all the parts of the thyroid.

The lobes are equal in size and softer than the isthmus, which is much enlarged and of firm consistence. At present the goitre measures from the external margins of the lobes across the most prominent part of the isthmus $11\frac{1}{4}$ inches. It began when she was about 12 years old, at which time patient also began to menstruate. The right lobe was first affected, and at that time was very soft. Patient is not certain whether it temporarily increased in size during the menstrual period, but states that it grew very gradually till she was 30, when after her first pregnancy it increased very rapidly in size. After labour it diminished, but again grew larger each successive pregnancy till within two years ago, when menstruation ceased. Previously it had only occasioned shortness of breath on climbing a hill. In this case there is distinct heredity. Her father had a swollen neck of the same nature, and a sister, two years younger, has a goitre which developed about the same time. This sister has been married ten years, but has had *no* children, and the swelling remains the *same* size as it was before marriage. A daughter of the above also suffers from goitre.

CASE IV.—M. A., aged 44, married, and with *no* children, suffers from a goitre which has existed since she was 12 years of age, at which time she also began to menstruate. Since then it has gradually increased in size, perhaps more rapidly within the last three or four years. Patient was married when about 32, but having had no children, at no time noticed any very marked increase in the size of the swelling. Patient thinks there is a greater tightness and fulness of the neck during the menstrual periods, which still regularly continue. There is now a peculiarly prominent goitre of unusual projecting shape, due to extraordinary and distinct enlargement of the isthmus, which protrudes forward, and is fully the size of a duck's egg. Both lobes are also affected, the right much more than the left. Patient's father had a goitre, and, as already mentioned, both her sister and niece suffer from the disease.

CASE V.—Mrs P., aged 47, married, and with ten children, suffers from a goitre about the size of a cocoa-nut. Both lobes are affected, the left lobe being soft, the right hard and of fibrous consistence. It used to occasion great breathlessness by pressure on the trachea. It began when she was 22 years of age, after the birth of her first living child, and grew progressively larger each successive pregnancy, but diminished to a slight extent after labour. At one time it was so large as to be on a level with the chin, and extended up under the ears. Since the climacteric, five years ago, it has gradually grown "smaller," and still continues to grow less. The only inconvenience complained of was great breathlessness and noisy breathing at night, so that it could be heard downstairs.

It is unnecessary for me to detail more cases at present; from these, as from the others, the invariable course of the disease might be described as follows:—A woman has a goitre, which has developed at or near the time of puberty. For a few years it continues to increase very gradually in size, or even remains stationary, till after marriage. The patient becomes pregnant, and soon after the thyroid begins rapidly to enlarge, sometimes attaining enormous dimensions, and causing great breathlessness during parturition. After labour it diminishes, sometimes to its previous extent, but oftener remaining a little larger, until the next pregnancy, when again it rapidly assumes formidable dimensions, only once more to become reduced in size after labour. And this goes on each successive pregnancy until the age of child-bearing ceases, and the climacteric is passed, consequent on which there usually follows a distinct and permanent diminution, the tumour in some instances entirely disappearing. As striking, though not so constant a history, is that of goitre in married woman who have had no children. In these, two of which I have recorded, "No" special or rapid increase in the size of the tumour was at any time noticed, and if it increased in size at all, it was by gradual, constant, and almost imperceptible growth. It is true that the whole glandular system of the female is much more developed during pregnancy than it ordinarily is; and the probability is, that at this period the function of the thyroid, whether mucin-excreting or hæmopoietic, is greatly increased.

When this stimulus of pregnancy is combined with powerful, or even slight endemic influences, might not an enlargement, which, in other circumstances, would be temporary and physiological, become permanent and pathological, and in this way the ordinary form of goitre most commonly result?

Influence of the Sympathetic Nervous System.—The influence exerted by the generative organs on the thyroid gland is most probably through the sympathetic nervous system, from the inferior and middle cervical ganglion of which its main nerve supply is derived.

M. Poincaré, in *Robin's Journal de l'Anatomie*, points out the great richness of the gland in nervous filaments of all sizes. This is the more curious since the gland presents no remarkable indications either of sensibility or mobility. No doubt the gland contains a large number of vessels which require constantly many vasomotor fibres, but the nervous supply is out of proportion to what may be supposed requisite for this purpose. M. Poincaré thinks this peculiarity accounts in some measure for the close relationship known to exist between the thyroid gland and the generative organs, and believes that many of them are of a sensory nature (*Lancet*, January 1876, p. 616).

Dr Hawkes, of Maidstone, considers it has never been satisfactorily explained by what means the inhibition of hard

water acts on a gland so remote from the centre of assimilation, and thinks it would simplify matters by regarding goitre "as the outward sign of a peculiar form of disease, which consists of a tendency to relaxation of the walls of particular vessels under the influence of a morbid condition of the ganglionic system." It is more common in females—(1) because they are more sensible to the causes from their more delicate organization and habits of life; (2), because they are habitually under the influence of the sympathetic nervous system in a far greater degree than the other sex, owing to their uterine functions" (*Lancet*, January 1861).

Dr Handfield Jones is of opinion "that goitre may with great probability be ascribed to a paretic condition of the vaso-motor nerves of the thyroidal vessels" (*Medical Times and Gazette*, January 1864, p. 630).

Dr Braxton Hicks supposes both exophthalmic and single goitre to be the results of local congestions. The tendency to local congestions being greater in women, this circumstance accounts for the greater frequency of both these affections in the female.

M. Nivet believes that the "disease may possibly be due to some rheumatic affection of the vaso-motor nerves of the thyroid gland" (*Medical Times and Gazette*, February 1878).

Dr Woakes says, "The point of departure in the morbid process consists in a paresis of the vaso-motor nerves, which mediate the vessel area constituted by the thyroid gland. The source of this paresis is the sympathetic ganglia from which these vessel-nerves issue; and the outcome of such paresis is a chronic state of vessel dilatation as regards the area in question." He considers goitre to be due to a defect in the vaso-motor centres regulating the blood-supply of the thyroid region, which defect has acquired the maximum of intensity by long ages of breeding in, added to hygienic surroundings of the worst conceivable description. In exophthalmic goitre the vaso-motor paresis affects a wider range of ganglia. The immediate cause of goitre is in most cases reflex, the condition of the sub-centres being inherently weak by heredity, and the effects of an over-wrought civilization. A strong co-relation exists between the thyroid and the genital organs, there being evidence to show that fibres from the cervical ganglia are in direct continuous communication with the ganglia which preside over the circulation of the genito-urinary organs" (*Lancet*, January 1881, p. 448).

Professor Laycock emphasizes this relation very strongly in his clinical lecture on the "Goitrous Diathesis." After showing that the causes of goitre are purely endemic, he states that about 90 per cent. of the persons affected are women. "Where goitre and cretinism are endemic you have two classes of cretins, the goitrous and the ungoitrous. This difference depends really upon the difference in the development of the sexual organs. The un-

goitrous cretins are the most completely degenerate, for they present no marks of sexual development, even in adult age, being infants in this particular. Evolution of the body has in these cases been arrested either at the close of the first dentition or at the beginning of the second. We may, therefore, conclude that goitre is the result of the morbid actions of the sexual organs on the thyroid body, and that in 90 per cent. of ordinary cases it is the ovaria which have this influence. This action, I think, must be through the nervous system upon the vessels which subserve to the nutrition of the thyroid body, these vessels being branches of the carotid arteries, and the nerves from the cervical sympathetic. When endemic causes are absent, those which act on the sympathetic or nerve centres are usually sexual excess and depravity" (*Medical Times and Gazette*, January 1862, p. 450).

If we suppose the supply of blood to the thyroid to be increased by dilatation of its arteries, and its cell elements to have their nutritive actions increased by the loss of controlling nerve influences, hypertrophy must clearly result.

Whatever the true causes of endemic goitre may be, I consider that, given these endemic influences, the actual determining and exciting cause is not uncommonly pregnancy. In pointing out the close relationship between enlargement of the thyroid and disturbances of the generative functions, we are more able to account for its greater prevalence in women; and in considering the powerful control which the sympathetic nervous system exercises over the gland, we can better understand how, under the influence of certain special agencies, hypertrophy results, and goitre is produced.

V. — ON THE STATE OF THE KNEE-JERK AND THE OCCURRENCE OF FOOT CLONUS AFTER EPILEPTIC ATTACKS.

By JAMES OLIVER, M.B. Edin., M.R.C.P. Lond., F.R.S. Edin.

KNEE-JERK, or patellar tendon-reflex, is the excursion of the foot and leg, or mere contraction of the vasti muscles produced by a sharp tap on the lower part of the patellar tendon. Foot clonus is the to-and-fro rhythmical movement due to rapidly alternating contraction and relaxation of the muscles of the calf of the leg, arising in some altered states spontaneously, but more usually produced by a more or less sudden but maintained tension of the aforesaid muscles, and which oppose dorsal flexion of the foot.

The state of the knee-jerk and the presence or absence of foot clonus are now justly considered objective signs of some worth in the diagnosis of nerve change. An investigation, therefore, of

these phenomena as they occur after epilepsy—a so-called purely functional disorder—may not only prove interesting but instructive. In cases of *tabes dorsalis*, with few exceptions, the knee-jerk is absent, whilst in lateral sclerosis, except, perhaps, during the very early days of the disease, the knee-jerk is markedly increased, and the foot trepidation readily developed.

In comparative health all the muscles of the body exist in a certain state of tension, and a sudden tap on the lower part of the patellar tendon throws into vibration the muscle protoplasm, and produces a visible contraction. The protoplasmic particles, however, may undergo some distinct chemical or structural change, whereby the susceptibility to molecular trepidation may be either increased or diminished. If the muscle tone be materially lessened, a sudden and sharp tap on the patellar tendon, for example, may be wholly insufficient to disturb and throw into vibration the protoplasmic masses. If, on the other hand, the muscle tone be somewhat increased, we shall forthwith detect a corresponding increased proneness to molecular trepidation, which may evince itself in an exaggerated knee-jerk and readily developed clonus. The velocity of the muscle wave, and readiness with which the protoplasm may be thrown into vibration, depends not only upon elasticity or tension, but also upon density. Anything which increases the density lessens the tendency to molecular disturbance. Elasticity and density alter proportionately according to temperature. The greater the temperature the higher the elasticity and the more rapid the vibration, whilst the lower the temperature the greater the comparative density and the less rapid the velocity. Density, let us ever remember, does not augment velocity. Muscle is highly elastic, and it is the separation of the particles from each other which allows of vibration. Muscle deprived of blood has its density increased, and the susceptibility to molecular disturbance therefore materially lessened. In healthy individuals the elasticity or tension of muscle protoplasm may under similar circumstances be considered as more or less constant. The density, however, may be increased by the introduction of bromide of potassium and other salts, whilst the elasticity may be augmented by a change in the relative proportion of the gaseous constituents. The density of the muscle protoplasm may be increased, or the tone be markedly diminished, and yet through the medium of the tendon the particles be thrown into vibration and produce a visible contraction.

When a clonus is produced, the muscle exhibits actual energy which, increasing eventually, becomes transformed into potential. One protoplasmic particle impinges against another, and recoils; when the full recoil is reached, it has acquired potential energy; and attraction then coming into play, the energy again becomes

actual. The vibration, therefore, or trepidation, is due to the rhythmic play of the two energies—the rapidly alternating conversion and reconversion of the one into the other. The protoplasm may, however, eventually become exhausted, and ere the same phenomenon can be again displayed, time must be allowed for recovery. Muscle, because of an inherent vital power, is capable not only of receiving, but storing and transforming energy.

The state of the knee-jerk after epileptic attacks is most variable, not only in different individuals, but in the same patient after different attacks, and this without any apparent similarity or dissimilarity either in the mode of onset, the presence or absence of consciousness, or the character of the convulsion. As a rule, knee-jerk is present, and appears normal in quantity or but slightly exaggerated—often it is absent. The patellar tendon phenomenon, when present and associated with foot clonus of the same side, is never specially increased, as is usual in cases of organic disease of the nervous system, in which we find these two physical signs co-existent. Although it is somewhat strange that these two phenomena, when present after epileptic attacks, bear no proportionate relationship, it is still more astonishing that we detect no constant existence of either, and may encounter every possible variation. Recently I watched a boy closely in whom the convulsions were general, the only fact worthy of note being that the attack invariably began on the left side and spread to the right. In this case, after what appeared to me similar epileptic attacks, I would sometimes find no foot clonus at all on either side, but the knee-jerk well marked on the right side and absent on the left; whilst at other times I found foot clonus and no knee-jerk on the left side, but knee-jerk and no ankle clonus on the right.

Foot clonus may be developed when the epileptic attack, independent apparently of any coarse lesion of the brain, consists only of slight convulsive twitchings and no loss of consciousness. As a rule, however, in so-called functional epilepsy, when the convulsions are well marked, foot clonus is more readily elicited, and continues longer in existence on that side on which the convulsion was greater. If the attack is unilateral, foot trepidation is usually but not invariably confined to the affected side. Ankle clonus may be produced in one or both limbs when there has been simply loss of consciousness, so called *petit mal*, with no apparent muscular disturbance. It may also be developed after rigidity or mere quivering of the limbs, with loss of consciousness. Under any circumstances it is always transitory, lasting from one to five or six minutes, rarely longer. I have once seen foot clonus capable of development at any time in a case of functional epilepsy.

It is more than likely, taking all the facts into consideration,

that the state of the knee-jerk and presence or absence of foot clonus after epileptic attacks are phenomena dependent on some altered condition of the muscle protoplasm, but whether directly or indirectly influenced through the medium of the nervous system must still remain problematical, yet worthy of investigation.

VI.—SUCCESSFUL CASE OF LAPAROTOMY.

Reported by DAVID WALLACE, M.B., C.M., Demonstrator of Anatomy, Edinburgh University, late House-Surgeon, Royal Infirmary, Edinburgh.

ON 18th March 1885, Peter I., æt. 50, was admitted, on the recommendation of Dr Donald, Leith, into the Royal Infirmary, under the care of Professor Chiene. He was said to be suffering from obstruction of the bowel. About eight months before admission he had a severe attack of diarrhoea, which lasted for two or three hours. Subsequently he had frequent attacks of constipation, and on one or two occasions suffered from slight pains in the abdomen—no particular part of the abdomen being affected. In other respects he had been strong and healthy. On the evening of 14th March he was seized by a severe pain in the abdomen, in the neighbourhood of the umbilicus. His bowels moved freely that night. He vomited any food he took during the following day, the vomited matter consisting entirely of the meal taken at the time. The pain was continuously present, although varying somewhat in intensity. After he had been in that condition for three days, Dr Donald saw him and ordered enemata, by means of which small quantities of fæcal matter were brought away. On the following day, or four days after this acute attack, he was admitted into the Royal Infirmary.

His condition was then as follows:—A strong man, but with an anxious expression; his features were drawn and his aspect flushed; skin cold, but not clammy. He was quite conscious, and answered questions about his condition readily. His legs were not drawn up in bed. The abdomen was prominent, more especially the right lower part. The walls were resistant, but no localized swelling could be felt, although there was marked resistance in the right iliac and lumbar regions. There was no special seat of pain, and no peristaltic movement of the intestines could be detected. The abdomen was tympanitic, except over an area corresponding to the ascending and transverse colon, where the percussion note was dull. The rectum was quite empty, and nothing abnormal could be felt per rectum. Temperature, 98°·8 F.; pulse, 80, not easily compressible. Tongue dry and covered with brown fur.

The case was diagnosed to be chronic obstruction of the bowel, and the following treatment was adopted:—An enema of olive oil

was administered, hot fomentations with tr. opii applied to the abdomen, and the patient got $\frac{1}{2}$ grain of solid opium, by the mouth, every three hours. The enema brought away a large quantity of faeces. Next morning, 19th March, the patient seemed easier; he still felt pain, but had had no vomiting. At 11 P.M., however, he was not so well, and had increased pain in the abdomen. On the morning of 20th March, that is two days after admission into hospital, the pain in the abdomen was greater, and the abdomen was more distended. His aspect was flushed, and his expression anxious. At 10.45 A.M. he had stercoraceous vomiting. Professor Chiene saw the patient at 1 P.M., and performed abdominal section at 1.30 P.M.

The operation was performed with strict antiseptic precautions, the spray with carbolic being used throughout. The lotion used was warm corrosive sublimate, 1-2000. The patient was put under chloroform, great care was taken to keep him warm, draughts were guarded against, and he was well covered with blankets. Cloths, steeped in warm corrosive sublimate, were put on the abdomen, and any intestine which was withdrawn from the abdominal cavity was supported on and covered by similar cloths, frequently renewed, in order to minimize the risk of a chill.

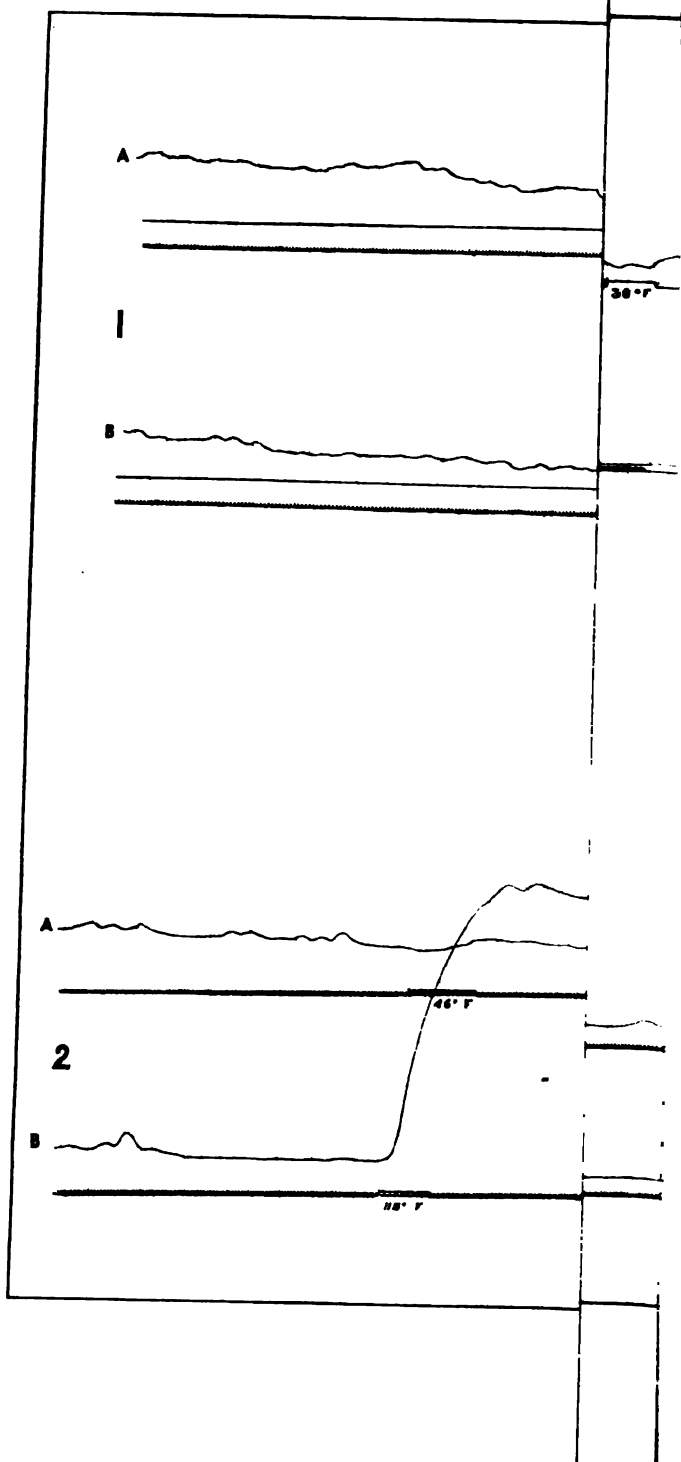
An incision, 2 inches in length, was made in the middle line of the abdomen midway between the pubes and umbilicus; the vessels in the edges were carefully secured before the peritoneal cavity was opened into. The peritoneum was cut with scissors, the finger being used as a director. There was a little fluid in the abdominal cavity, but the peritoneum was quite healthy. Prof. Chiene inserted two fingers into the abdominal cavity, but felt nothing abnormal; he then enlarged the opening so as to admit his hand, and explored the whole cavity as far as possible, but was still unable to detect anything of importance. The incision was still further increased until it extended from the pubes to the umbilicus, and the small intestine was gently drawn out of the cavity so as to reach the caecum. The intestine was of a grayish colour and very much distended with flatus, but not congested. After 8 or 9 feet of intestine had been drawn out a Meckel's diverticulum was seen. From the free extremity of this a fibrous cord (the thickness of a number 4 bougie), about $1\frac{1}{2}$ inches in length, extended, the other end of the cord being fixed to the mesentery. A knuckle of the small intestine, about 6 inches in length, had passed beneath this cord, and been constricted between it and the posterior wall of the abdomen. This knuckle of bowel was glossy and only slightly congested, as if recently constricted, and was quite collapsed. The cord was caught with Pean forceps, divided at the ends, and the included intestine freed. The intestine was further examined and found to be healthy, and on pressure the gases in the gut passed through the constricted part. The extruded intestine was then gently replaced—considerable difficulty, however,

being experienced in doing so. The peritoneum was stitched with catgut. The ordinary interrupted suture was used, and the ends of the catgut were left long. The surfaces of the abdominal incision were brought together with horsehair stitches put through the whole thickness of the walls, and the ends of the catgut were used as a drain. The wound was dressed with lint steeped in eucalyptus oil (1-6) and iodoform; above were placed large pads of sublimated pine wood wadding, and the dressing was firmly fixed with a broad Domette bandage. During the operation, which lasted one hour, the patient's pulse became rapid and feeble, and he vomited almost continuously small quantities of a thin yellow fluid, which had a faecal odour. Several hypodermics of ether sulphuris had to be administered.

After recovering from the influence of the chloroform the patient was restless and excitable. A morphia suppository ($\frac{1}{2}$ gr.) was administered, and he became much quieter, although he did not sleep. He vomited now and then until four o'clock in the afternoon, but not after that hour. At 3.15 P.M. he had a watery motion, and during the afternoon he had several similar motions, and passed a large quantity of flatus. In the evening, about 9 o'clock, he fell asleep, and slept for some hours. His pulse was 98 per minute, and strong; temp. $97^{\circ}8$. The following morning the patient felt comfortable, had no pain nor sickness, and the expression of his face was much improved. For the first thirty-six hours after the operation he was given nothing but ice, and was kept under the influence of opium. He then got some milk and soda water, and on the third day he was given Carnrick's beef peptonoids in milk. On the third day the patient was quite comfortable; the wound was dressed, and looked healthy and healing. His bowels moved naturally on 25th March, the fifth day after the operation. Up to that time the patient's progress had been most favourable, but his temperature then rose to $100^{\circ}4$, and he had a cough, accompanied by a viscid muco-purulent sputum. On examination of his chest copious coarse crepitations were heard over the anterior portion of the right side. There was no dulness on percussion, and no increase of vocal resonance or fremitus. He was given expectorants and stimulants; and inhalations of eucalyptus and iodoform; and turpentine stupes were applied over his chest. He became weaker, and on 26th March the respirations were rapid (56) and shallow, and he had much greater difficulty in expectorating. He felt no pain in the abdomen. Ordered creasote $1\frac{1}{2}$ $\mathfrak{m}$ every three hours, and he got large quantities of stimulants.

On 27th March the condition of the chest had improved. Respiration was slower, and expectoration easier. Patient evidently much better. The wound was dressed, and the edges were found to be united. None of the stitches had given way.

From this time the patient rapidly recovered. The stitches were taken out on 2nd April (11th day). He was given con-



valescent diet, and allowed to get out of bed on 5th April. On 18th April (27th day) the wound was perfectly and firmly closed, and he was allowed to walk for the first time since the operation.

He was discharged on 20th April, twenty-nine days after the operation. Since then he has reported himself several times, and states that he feels as strong as ever he did, and that he has recommenced his previous employment and is quite able for it. The wound is firmly closed, and he has no pain of any kind.

VII.—ON SOME OF THE PHYSIOLOGICAL AND THERAPEUTIC EFFECTS OF WATER AT DIFFERENT TEMPERATURES, WITH SPECIAL REFERENCE TO OBSTETRIC AND GYNÆCOLOGICAL PRACTICE.

By R. MILNE MURRAY, M.A., M.B., M.R.C.P.E., Physician for Diseases of Women, Western Dispensary, etc.

(Continued from page 139.)

LET me now consider the effect of repeated applications of such a stimulus. This is shown in Plate III. The upper lines in these represent a series of consecutive experiments. Each experiment was made at an interval of 25 minutes after its predecessor, so as to enable recovery to take place. The result of this treatment is sufficiently obvious from a glance at the four tracings, and they are stated with clearness in the following table:—

TABLE I.

Effect of Successive Applications of Cold Water.

No.	Temp. of Water.	Latent Period.	Contraction Period.	Relaxation Period.	Maximum Rise.
I.	44° F.	37 secs.	3 m. 20 secs.	4 m. 36 secs.	1·4 in.
II.	46° F.	1 m. 30 secs.	2 m. 50 secs.	5 m. 5 secs.	1·1 in.
III.	36° F.	15 secs.	40 secs.	58 secs.	·3 in.
IV.	36° F.	20 secs.	3 m. 4 secs.	2 m.	·7 in.

From these tracings and the above table, it would seem that repeated application of cold water rapidly exhausted the excitability of the uterine muscle. While the first application gives us a rise of 1·4 inch, and the last gives only ·7 inch, and the second last ·3 inch. On the other hand, the latent period becomes reduced, while the period of relaxation becomes very much abbreviated, from 5 m. 5 secs. in II. to 58 secs. in III.

The efficiency of the contraction is thus vastly diminished. The *exhaustion of the contractility of the muscle by cold water* is completely borne out in all my experiments. However efficient the first contraction may seem to be, it invariably has happened that the succeeding ones become weaker, until barely any response follows the application of the stimulus. Still further, these tracings were taken, as I have said, at intervals of 25 minutes, so that the muscle had time to recover so far as it could from its previous exhaustion. If, on the contrary, the water be applied within a few minutes after the disappearance of previous effect, only the smallest possible movement is obtained, scarcely sufficient, indeed, to produce any rise of the lever. Again, should water be applied at the time the contraction is at its maximum, this does not in any way retard the development of the relaxation, which goes on as if nothing had been done. In order to reproduce a definite contraction by means of cold water, it is absolutely essential that a distinct period of rest intervene between one application and the other.

B. Effects of direct application of Water at Temperatures above 100° F.—When water at temperatures over 100° F. is directed upon a similar portion of uterine tissue, a very different effect is produced, and the curve assumes an entirely different character.

B exhibits in the second line, Fig. 1, Plate II., the characteristic features of this curve.

The experiment was made about 10 minutes after the conclusion of that with cold water, already described, marked A. Water at 115° F. was applied in same amount at X, and it will be noticed that there is practically no latent period, the lever leaves the abscissa at once. Moreover, it descends rapidly during the greater part of its course, and ultimately shows an ordinate much greater than was produced by the cold water just above it. The period of relaxation follows in the usual way. But the tracing looks shorter than it should do; the drum accidentally stopped, as will be seen by the markings of the chronograph at the points indicated by the †. The difference between the characters of the two curves, in so far as their latent period and contraction period are concerned, is sufficiently obvious.

Fig. 3, Plate I., presents in its second line what is the typical action of water at 115° F.

The upper line shows the normal rhythm. In the second line, at the point marked by the rise of the signal, 5 c.c. of water at 115° F. were applied. A natural contraction is just being completed, and there seems a slight delay in the response; but long before the whole of the water has been applied a sharp ascent is being described by the lever going straight to its maximal position in 25 seconds. The period of relaxation then sets in, and continues for 12 minutes. It will be seen that the descent is broken up

by a series of secondary waves, which seem to represent the natural rhythm superadded to the tonus induced by the hot water.

Such a record renders obvious at a glance the great difference between the efficiency of hot and cold agents in producing contraction in the muscle. I would draw special attention to the almost total abolition of the latent period, to the rapidity with which the contraction develops and attains its maximum, and to the long duration of the relaxation period—in a word, to the marked advantage which hot over cold stimuli have in the rapidity and duration of their effects.

But this advantage becomes much more striking when we investigate the effects of *repeated* applications of hot water to the same muscle in inducing contraction.

Let me ask your attention again to the tracings on Plate III., already shown to illustrate the action of repeated application of cold water.

The lower line in these tracings shows the effects of four successive applications of hot water to the same portion of muscle, experimented on with the cold water and already described.

Water at 115° in the first three and 100° F. in the fourth was applied, as indicated by the signal, and the results speak for themselves.

It will be seen (1) that the latent period is abolished, (2) that the maximal contraction is attained with great rapidity, and that the relaxation is slow and gradual.

The results are shown in the following table:—

TABLE II.

Effect of Successive Applications of Hot Water.

No.	Temperature.	Latent Period.	Contraction Period.	Relaxation Period.		Maximum Contraction.
				Min.	Sec.	
I.	115° F.	1 sec.	35 secs.	6	36	1·9 in.
II.	115° F.	4 secs.	34 secs.	9	45	2·9 in.
III.	115° F.	2 secs.	36 secs.	11	20	2·3 in.
IV.	110° F.	4 secs.	1·40 secs. ¹	15	14	3·2 in.

Comparing this with Table I., it will be seen that the latent period has almost reached the vanishing point. In the next place the contraction period remains almost perfectly constant (the peculiarity of IV. being explained by the tracing). But, on the other hand, whereas Table I. shows a great shortening of the period of relaxation, the experiments of Table II. show an enormous

¹ In IV., chief part of contraction occurring in 24 secs.

lengthening, i.e., a great prolongation of the tonus; while, lastly, each successive application results in a notable increase in the maximal effect produced, 1.9 inches in I., to 3.2 inches in IV.

I can perhaps make the contrast between the mechanical equivalent of cold and hot stimuli more apparent by the following method:—

Multiply the figures representing the period of relaxation with the figures representing the maximal contraction in the first and fourth experiments in each Table. The products will indicate, 1st, the relative efficiency of the two stimuli in inducing contraction; and, 2nd, the alteration which that initial efficiency undergoes by successive repetitions of the stimuli. Thus in

Table I.	{ Experiment I. = 6.104.
	{ Experiment IV. = 1.4.
Table II.	{ Experiment I. = 12.084.
	{ Experiment IV. = 48.448.

Thus it comes out that while the initial efficiency of cold and hot stimuli vary as 1 to 2, the efficiency of cold stimuli *diminishes* in four experiments from 6 to 1.4 (nearly to $\frac{1}{4}$), while the efficiency of hot stimuli in the same number of experiments *increases* from 12 to 48.5, more than four times. Nothing which I can conceive could make the contrast more apparent. I have made a large number of observations with water at temperatures varying from 100° F. to 130° F. in order to determine the most effective temperature. The results show that temperatures under 110° F. produce a smaller maximal contraction, while temperatures over 120° F. often give sudden descents in the relaxation period. I conclude, then, that the most efficient temperature lies between 110° and 120° F.

In speaking of the action of cold water, I pointed out that repeated applications of cold failed to produce a reproduction of the contraction until a period of rest had first of all intervened. The action of warm water, again, presents a contrast to that of cold in this respect. If a second application of hot water be made to the portion of muscle undergoing relaxation, it will at once respond, and contraction will immediately ensue, and this can be repeated indefinitely. If, on the other hand, a continued stream of warm water be applied, the tracing does not indicate a perfect tonus, but the lever traces a curve, keeping high above the abscissa, but broken up by a series of waves showing commencing relaxation cut short in their development.

I shall, perhaps, render more intelligible what I have now attempted to describe as the characteristic features of the action of water at different temperatures on the uterine tissue if I place the special points in their action side by side in parallel columns.

TABLE III.

*General View of the Action of Cold and Hot Water.**Cold, 32° to 60°.*

1. Marked latent period.
2. Contraction develops slowly.
3. Relaxation about three times duration of contraction.
4. Successive applications can only induce contraction after period of rest. These contractions become greatly diminished in efficiency, the period of relaxation and maximal contraction being greatly reduced. *Loss in four experiments, 4ths of initial efficiency.*
6. Continuous application produces rapid exhaustion, muscle becoming completely relaxed, and failing to respond.

Hot, 110° to 120°.

1. Latent period absent or very short.
2. Contraction develops rapidly.
3. Relaxation about 12 to 24 times duration of contraction.
4. Successive applications followed at once by response. Efficiency of contraction greatly increased. The period of relaxation and maximal contraction are much increased. *Gain in four experiments, FOUR TIMES initial efficiency.*
5. Continuous application induces a high degree of contraction, broken up by secondary waves of partial relaxation and contraction.

ACTION OF COLD AND HOT WATER ON VASCULAR TISSUE.

Time will not permit me to go fully into a consideration of the changes which the application of these stimuli to blood-vessels will have on the flow of blood through them, and consequently on the vascularity of the parts supplied by them; I shall, accordingly, endeavour to record as briefly as I can the results of two or three experiments, which will, I trust, serve to throw some light on this question.

To begin with, it is perfectly easy to see that whenever either cold water 50° F. to 32° F., or hot water 110° F. to 120° F., is applied to a portion of the uterus such as we have been considering, the vascularity of the tissue becomes manifestly altered, the colour changes, the redness disappears, and a pale cream colour takes its place. Moreover, if the rise of the lever of the recording apparatus is kept in view, at the same moment it will be found that the blanching is most marked when the lever is at its highest point—in other words, the development of the anæmia is coincident with the muscular contraction of the organ. Not the remotest evidence is afforded of Emmet's statement, that hot water always induces relaxation first and contraction afterwards. Water at 110° F. and upwards invariably induces contraction from the very first, and that much more rapidly than cold water does. Emmet's mistake has arisen, as I have said, from an attempt to harmonize his ideas that all warm water induces dilatation with his observation that some warm water sometimes induces spasm.

It is certain that water from 70° F. to 103° or 105° will invariably dilate bloodvessels and promote the flow from open ones, but it is equally certain that water of temperatures from

110° to 120° will have just the opposite effect. His reasoning is faulty, and his conclusion wrong in making "some warm water" include "all warm water."

The two following experiments will bring out the correctness of this view, and are, I trust, sufficiently conclusive.

Experiment 1.—The whole uterus and vagina of a full grown doe were raised out of the abdominal incision. The extremities of the horns were supported in a vertical position by two hooks, in such a way as to expose the web-like and highly vascular expansion of the mesometrium, which stretches from the vagina to the cornua on either side.

Two glass jets, one discharging water at 40° F., the other discharging water at 115° F., were directed each on one side of the expansion. The stream was continued for four minutes. Soon after the commencement of the stream both sides became pale—almost white—and nothing was to be seen save two or three arterial twigs, which were evidently distended to their utmost by the spasm of the arterioles. At the end of four minutes the side receiving the cold water showed signs of returning vascularity, that receiving the hot was still perfectly anæmic. Four minutes later the cold side was bright red, the hot side was still white. Eight minutes after the cold side was an intense scarlet, the bloodvessels standing out in spiral lines all over the tissue, while the hot side had assumed the appearance it had before the experiment. Half-an-hour later the conditions were the same, and the observation was not continued longer.

This showed clearly that while contraction followed at once in both cases, the contraction induced by the cold water was followed by intense reaction, while the vessels constricted by hot water regained their ordinary tone slowly, and without reactionary congestion.

Experiment 2.—The segment of a pregnant uterus was incised, and the edges of the wound caught by a pair of hooks so as to hold them apart, and permit bleeding to occur. The blood escaped freely.

A small stream of water at 123° F. was allowed to flow on the wound, when the bleeding immediately ceased. Cold water was gradually added to the vessel containing the water, and the temperature slowly fell to 100° F. About one minute afterwards the bleeding recommenced, at first slowly, but as the temperature fell to 90° the blood escaped more rapidly. During the five or six minutes which were necessary to reduce the temperature to 50° F. the blood continued to flow as before. When 46° F. was reached the escape of blood became markedly less, and a piece of ice being added the temperature rapidly fell to 38° F., and then to 36° F., when the bleeding entirely ceased, the water running off colourless. In about two minutes thereafter, the stream of water still being kept up, the oozing again commenced. A morsel of ice laid on the wound was quickly dissolved, and washed away in the

escaping blood, and it was evident that the cold had lost its influence. A sponge was dipped in water just hot enough to be barely tolerable to the hand, wrung out over the wound—the bleeding ceased at once, and the incision was closed by a Pean forceps.

The following deductions may be drawn from such an experiment:—

1. Water at temperatures of 120° F. and 10 degrees lower constricts bloodvessels and arrests hæmorrhage from small arteries.

2. Water at temperatures of 100° and 30 or 40 degrees under dilates small vessels and promotes hæmorrhage.

3. Water at temperatures of 50° F. and 20 degrees under checks hæmorrhage by constricting bloodvessels, but this only temporarily.

4. After water at the above temperatures has lost its styptic power, water at high temperatures is still effective.

It appears to me sufficiently evident from the observations I have made, that hot and cold water act in a similar fashion on both the muscular walls of the uterus and those of the bloodvessels. The histological and developmental identity of these two groups of muscular structures leads us to anticipate this, and we do not, I think, strain the physiological analogy if we presuppose that non-striped muscle wherever found will respond in a similar fashion to these respective stimuli.

Into the consideration of the explanation of these phenomena I cannot at present enter. The query at once arises in considering these results, How can we account for the difference in the action of heat and cold in such tissues? How, for example, are we to explain the rapid loss of energy which follows repeated stimulating by means of cold water, and the even greater apparent increase of energy which is exhibited under repeated stimulation by means of water at high temperatures?

I hope soon to complete some experiments which may serve to throw some light on this essential point. Meantime I must content myself by drawing attention to it.

II. THERAPEUTIC APPLICATIONS.

I have occupied so much of your time in the description of these results that I can only epitomise on the present occasion the remarks I proposed making on the therapeutic significance of the experiments.

- I. With reference to the use of hot water in inflammations. It is evident that in water at 120° F. we have an agent of immense power in controlling the local circulation in an organ, provided we can bring it to bear directly on the part. Accordingly, a stream of warm water directed into the vagina cannot fail to effect in a very direct way the circulation in the uterus. The smaller bloodvessels will respond in such a manner that their calibre

becoming narrowed under the stimulating effect, the abnormal blood supply will to a large extent be cut off, and the resulting phenomena of inflammation checked. The use of this agent in pelvic inflammation is now recognised as being of so much importance, and is so much employed by gynaecologists generally, that I do not need to dwell on it. I hope the action which I have shown it to possess, in causing contraction of bloodvessels, may help to convince any who may have had doubts of its efficiency.

II. Its efficiency in promoting the tonic contraction of non-striated muscle at once draws attention to its use as a promoter of uterine action. The conditions in which we seek to excite uterine contraction, when it is deficient or absent, may be divided into two classes.

1. Those in which the contents of the uterus have not yet been expelled.

2. Those in which the proper contents of the uterus have been expelled, but where the risk of bleeding is imminent from the absence of the natural contraction of the uterus.

1. Its efficiency in the first of these conditions I shall best illustrate by the following case:—In May 1883 I was called to see a patient whom I found three months pregnant, and in whom profuse hæmorrhage and regular pains had been going on for some hours. The patient had had two previous miscarriages, but no living child. On examination I found the vagina full of clots, the os rather less than a florin, and the ovum could just be reached by the tip of the finger. I made an effort to introduce my finger into the cavity, but even with the patient under chloroform I failed to pass beyond the cervical canal. I resolved to plug the vagina, but before doing so proceeded to wash it out as a precaution against sepsis. The nurse provided me with water just tolerable to the hand. In order to provide against any water entering and distending the uterus, I conveyed the long vaginal tube with my fingers into the posterior fornix, and retained it there while the water was thrown in. After two or three syringefuls had been injected, I found the water so warm that I felt compelled to withdraw my fingers; but just as I was doing so, was surprised to find the entire ovum projected through the os into the vagina, and actually pushed into my palm.

Since that occasion I have had two similar cases in which the douche was equally effective in securing expulsion of the ovum; and in all cases where the abortion is inevitable, where hæmorrhage is going on, and the os dilating, I should adopt it as a routine practice. If it should fail, its use in no way prejudices the employment of the plug or the sponge tent, should they be necessary; and should it be effective, as I believe it will be in most cases, the serious risk of sepsis in the use of the plug or tent will be avoided.

2. It is, however, in those cases where, after the contents of the uterus have been expelled, and that organ remains flabby and relaxed, and where hæmorrhage is occurring or is imminent, that the value of this agent most appears. I cannot enter fully into the consideration of the question of the use of hot water in post-partum hæmorrhage here, but must content myself with a general summary of the advantages which can be claimed for hot water as a uterine hæmostatic.

(1.) *The rapidity of its action.*—The tracings I have shown no less than the results of experience amply bear this out. I am surprised to notice, in a discussion at the American Gynæcological Society two years ago, Dr F. Barker stated that his chief objection to the use of hot water was its taking twenty minutes to act. Dr Barker's experience is surely singular in this respect.

(2.) *The duration of the tonus produced.*—This gives time for the formation of coagula, so that by the time relaxation begins the bleeding sinuses and vessels are plugged securely.

(3.) *The absence of vascular reaction.*—Every one who has employed cold applications to the bleeding uterus must have been struck with the tendency to recurrence of the hæmorrhage some time after it has appeared to stop, and the rapidity with which the uterus relaxes and assumes the characteristic doughy feeling. Nothing is more striking in the use of hot water than the persistence of the tonic rigidity of the uterus which follows its employment.

(4.) Further, the remarkable fact which comes out as to the *absence of exhaustion* following its use is one of the most important advantages of hot water. It is undoubted that non-striated muscle will respond to the stimulus of hot water time after time, and with increased vigour, whereas cold water seems to exhaust its contractility almost at once. The importance of this distinction in the event of a recurrence of the hæmorrhage cannot well be over-estimated.

(5.) I would now draw attention to the point which is often apt to be overlooked in comparing the values of hot and cold stimuli. It is almost inconceivable how great must be the violence of the shock which the exhausted system suffers from the immense loss of natural heat which accompanies every application of cold to the mucous membrane of the vagina or uterus.

What could be better calculated to extinguish the last flickerings of vitality than the drenching of an extensive vascular surface with a stream of ice-cold water? On the other hand, the hot application, while doing all, and much more, than the cold to check hæmorrhage and excite contraction, will add to the exhausted system much of that essential heat which has been lost in the escape of the heat distributing fluid. Were the values of the two applications equal in every way but this, this alone, in my opinion, would place hot applications incomparably above the other in therapeutic efficiency.

III. In the last place, I refer in a word to the value of hot stimuli in checking hæmorrhage in other parts of the body.

In plastic operations about the vagina and perineum its value in checking oozing has been long recognised by gynæcologists, and I am often surprised that in plastic operations about the face and elsewhere surgeons do not avail themselves of this means of saving their patients much blood and themselves much trouble.

Lastly, in hæmorrhage from the stomach, *e.g.*, gastric ulcers, I am convinced that better results by far would be obtained by making the patient sip or drink water at 120° to 140° than by the use of ice, or mineral or vegetable astringents.

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EXPLANATION OF PLATES.

All the tracings are photo-lithographs, one-half the original scale.
The time lines show seconds.

PLATE I.

1. Tracing obtained from vagina of half-grown rabbit. The downstroke represents the contraction, the upstroke the relaxation. (See note, page 138.)
2. Tracing from vagina of full-grown non-pregnant rabbit. The upper line shows the natural movement which had gone on for two and a half hours previous to this record. At *a*, *b*, and *c* on record line successive quantities of about 10 drops each of water at 51° C. and 49° C. (i.e., 125° to 120° F.), were applied. It will be noted that while the natural rhythm continues somewhat disturbed, the whole tracing leaves the abscissa. In the third line the gradual return to the abscissa is shown. 45 seconds elapsed between end of second and beginning of third line. (Downstroke = Contraction.)
3. A. Tracing from vagina of full-grown pregnant rabbit. (Upstroke = Contraction.)
The three periods of (*a*) contraction, (*b*) quick relaxation, (*c*) slow relaxation, are clearly seen.
B. Action of hot water on vagina. 5 cc. of water at 115° F. were applied during the period indicated by the rise in the signal line (lowest line of tracing), and is accompanied by rapid contraction and prolonged effect.
4. Tracing obtained from vagina of human female at the eighth month of pregnancy by means of a Barnes' bag placed in vagina and connected to a water manometer.
The smaller curves are respiratory.

PLATE II.

1. These tracings were obtained from the horn of a non-pregnant uterus.
A. 5 cc. of cold water, 42° F., were applied at the cross. Shows long latent period and slow contraction curve.
B. 5 cc. of hot water, 115° F., were applied at the cross. Shows short latent period and quick contraction.
2. Tracing from pregnant vagina. First part shows natural rhythm. Second part shows effect of cold water applied as indicated by the signal.

PLATE III.

These tracings were all obtained from a non-pregnant vagina. They illustrate the effect of repeated applications of cold and hot water. The upper trace A. in each figure represents the result of the application of water at low temperatures, while the lower, marked B., represents the effect of water at high temperatures. These figures are fully described in the text.

VIII.—THE LIFEWORK OF PROFESSOR JAMES SPENCE—
THE HARVEIAN ORATION. DELIVERED AT THE ROYAL
COLLEGE OF SURGEONS, APRIL 12, 1886.

By JOHN A. MACDOUGALL, M.D., F.R.C.S. Ed., Carlisle, President of the
Harveian Society.

(Continued from page 116.)

THE subject of hernia, and the operations for its relief and for its cure, have a kind of fascination for the surgeon. This may be due to the fact that in cases of strangulation, at least, there is no other procedure he will ever be called upon to carry out where his action may prove more highly beneficent, and in none in which in its execution his deftness of hand may be more fully displayed.

Very early in his surgical career this influence came to Mr Spence, for in looking over the pages of the *Monthly Medical Journal* of forty years ago, I find there related by him many interesting cases. All through the working day that was his he maintained in full measure this enthusiasm—an enthusiasm which a rarely large experience served to maintain, and the results of which remain to us as one of his richest bequests. It was but a short time ago that I heard it stated at the meeting of a Provincial Medical Society in the North of England, that in that especial district, thanks to the teaching of Mr Spence, early operation in cases of strangulation was now the rule. That this should be so I can well believe, for no one who ever heard him speak upon the subject but must remember his strong assertions, "that he never saw peritonitis that had not begun before operation as indicated by the condition of the bowel," and that "there was no risk in the operation itself if done early and before change in the constricted viscera had taken place." But as unfortunately happens too often, the surgeon has no choice—strangulation has long been in existence, and the changes which result from it have become fully developed before the patient comes under observation. It is in those circumstances when the danger is great, and when doubt and difficulty rise before us, that the remembrance of his teaching is of the highest value.

The special dangers of strangulation in congenital hernia—the necessity for the free division of the stricture in all cases of strangulation, but especially in this variety, the pulling down and thorough examination of the gut at the constricted point, its replacement within the abdomen or simply in the upper part of the canal as the condition of the bowel permits, and the stringent rule not to open the gut at once if it be in a state of gangrene. Very much have directions such as these done to render his pupils successful operators in cases of hernia; and although maybe the

days have come when gangrene of the gut may be dealt with on other lines, there can be little doubt that his plan of allowing time for effused lymph to block the canal ere the sphacelated bowel is divided is, in contra-distinction to the old rule of immediate section, a notable and valuable improvement.

To me it seems, however, that among the golden threads of experience he has so lavishly woven around this important subject, maybe the richest is to be found in connexion with his management of hernia when reduced "*en bloc*." This has always been a point of interest and anxiety to the surgeon, for, careful as he may be in the reduction of protruded gut if his experience be a large one, he will be a fortunate man if some day this condition does not come before him with all its urgency and all its gravity. The difficulties which surround it are twofold, for it is sometimes not altogether easy to diagnose, and dependent on a certain or uncertain diagnosis must rest our line of treatment. The conditions from which we have to distinguish it are a constricted hernia partially reduced from the canal, and from an internal strangulation coincident with a reducible hernia. Heretofore there has existed a discrepancy of opinion as to the surest way by which to discriminate between them, but the method pointed out by Spence, and one in which he placed the greatest confidence, was to endeavour, by the action of the abdominal muscles, to reproduce the protrusion. This, in the case of a partially reduced hernia, they do readily, for lying as it does in the axis of the canal it speedily yields to the expelling force. When internal strangulation co-exists with a reducible hernia the conditions are different, for here, as he shows, owing to the abdominal tension brought about by the harm in the peritoneal cavity, retention of the hernia is difficult, its tendency is to protrude. Given, then, a case in which symptoms of obstruction arise or continue after apparent reduction of a hernia, if in addition to the fact that we find a certain fulness and hardness in the region of the abdomen proximate to the canal, and having called into distinct action the expulsive powers of the abdominal muscles, there be no re-protrusion, then operative procedure is clearly indicated, and should be carried out without delay. Upon the form this procedure should take he also held strong opinions. It had been urged that as there was a difficulty in diagnosis—a difficulty, however, which his instruction has largely overcome—direct operation upon the canal might do little for the patient if internal strangulation was present, the safer plan was to open the abdomen by median incision. To this his objections were decided, for, as he argued, should the condition prove one of reduction "*en masse*," you have to deal with the point of constriction at a disadvantage, inasmuch as you have to draw upon the parts in order to bring them somewhat into the median line, and you have to divide the stricture from within outwards, during which proceeding there arises great risk of wound of the bowel. Added to these

objections, and having, as I take it, the greater weight, there was the dread that the necessary traction might cause rupture of the bowel, the coats of which had probably been for a long time and very tightly constricted, and that the disruption would occur in the cavity of the peritoneum itself. Moreover, should it be found that the gut was in that uncertain condition in which complete reduction might be followed later by grave disaster, then the difficulty would arise as to how best to deal with it.

In the direct operation there was no such trouble; the sac was opened, as a hernia sac generally is, outside the abdomen, and if its contents were not fit for immediate replacement they could be left in such a situation as would best tend to avert future harm. Whether, in these times of restless abdominal surgery, such doctrines will always be acted upon it is impossible to say—all I would venture to add in support of them is, that experience has convinced me that in no way does Mr Spence overstate the advantages of the operation done through the canal, either in the search for the displaced sac, or in the satisfactory manner in which, after having found it, we can deal with its contents.

As it was granted to him to help us in the diagnosis and the treatment of reduction *en bloc*, so was it to aid us in another direction, for in consequence of his experience of a case in which, taken all in all, the circumstances are unique, he has left on record the best method of treating cases of strangulation in which an irregular obturator artery lies in contact with the sac. The possible existence of this abnormality must be present in the mind of every one called upon to operate for femoral hernia, and it is ever a satisfaction to remember that by following the advice of Mr Spence we may not only be able to detect the presence of the vessel, but with care in ordinary circumstances to avoid wounding it, and in extraordinary circumstances to reach it in such a way that its division and ligature can be safely carried out.

From the beginning up to the very close of his career Spence was great upon the subject of lithotomy. How early and thoroughly it had attracted his attention is proved by the numerous quotations he makes in his paper written in 1841, on hæmorrhage occurring in connexion with this operation, displaying thereby a very intimate acquaintance with the literature of the subject. In few ways can the surgery of the dissecting-room have proved more valuable to him, for the practice there acquired enabled him to make his incisions in such directions as they would least jeopardize important parts, and thus largely conduced to the formation of an opinion expressed after an experience of forty years, "that there is no great danger attendant on lithotomy if properly performed." Fortunately the record remains of the knowledge that guided him, and is to-day accessible to each one of us. Noteworthy is his testimony to the advantages of the rectangular staff, for that it renders the operation easier and the section of the

deep parts a less anxious proceeding is certain. In one class of cases, however, he objected to its use: where there was an enlarged prostate, and where, in consequence of the shortness of the horizontal line, its extremity might not be lodged within the bladder.

Of especial value is what he tells us regarding the performance of the operation in children, a proceeding simple enough when we call to remembrance the cautions he emphasizes, but one upon which some fair reputations have ere now suffered shipwreck. Although a very successful operator, he was, with all his knowledge of the literature of the subject and of the anatomy of the parts involved, unable to command unvaried success, and to us now perhaps the most notable part of his teaching comes through his lack of it. And in this wise—his own experience and the recorded experience of others had led him to believe that the mortality in lithotomy is mainly due to causes not under our control—"That the size of the stone in relation to the width of the parts through which we must extract it, and a rigid unyielding condition of the prostate met with in some elderly and old men, in whom we also find most generally enlarged prostatic veins, seemed the conditions which continue to diminish the favourable statistics of lithotomy." The good reasons he had for such a conclusion are readily recognised, for he records that of the many times he performed lithotomy under the age of 40, only two patients died; while of forty cases operated on between middle life and old age, eight died, and all of these between the ages of 56 and 72. "All were large, fat men, and in all of them, with one exception, the prostate was rigid, and the stone above the average size. One died as the result of venous hæmorrhage, while four succumbed to phlebitic pyæmia." That the prostatic condition determined the issue in these fatal cases there can be little doubt, and that they happened in the hands of so accomplished a lithotomist is proof of how unable at times surgical skill is to cope successfully with such a state of parts.

But the science of Surgery does not stand still; since those early days of Harvey, pregnant through him with such good to our art, it has been advancing on all its lines, and it now seems as if in the wider development of litholapaxy and the performance of the high operation, as practised by Sir Henry Thompson, we may be enabled to escape the risks which notably diminished the success of a master in lithotomy.

Glad would he have been had he lived to see the day when results which were fraught with such trouble and anxiety to him, because they were bad ones, had this good inherent in them, that they lent help in the establishment of other methods, by the practice of which they might be reversed. That even here intuition did not fail him is evident, for in treating of the suprapubic operation, he thus writes,—“In cases in which the prostate is greatly enlarged and rigid, I cannot help thinking that by adopting the

suprapubic method we would avoid the danger incident to section of the prostate when so altered, whilst, owing to the bladder being permanently raised out of the pelvis in such cases, the risks of its subsiding after being opened, and consequently that of infiltration, would be lessened." On these very lines does its greatest advocate commend its performance now—a proceeding which has been rendered more easy and more safe by the experimental results of an old pupil of Mr Spence, Dr Garson, and the demonstrations of Petersen, of Keil.

The Edinburgh School of Surgery has long maintained a high reputation for success in the treatment of stricture of the urethra, and the success has not been more notable than the simplicity of the means by which it has been achieved.

Spence inherited all the best traditions of Liston, and he had for long years the incalculable advantage of observing the masterly practice of Syme. The reputation so deservedly attained by these great men in this department of surgery drew, doubtless, many bad cases of stricture to the wards of our infirmary, and thus it happened that the experience of him of whom I am speaking was large and ripe and full of value. To some of us less dexterous than others, it must have happened before the time when the relief which aspiration affords was within our knowledge, to have anxiety and trouble in certain cases of retention associated with enlarged prostate. In the passage of a catheter we had been utterly foiled, and if tapping by the rectum occurred to us, the impossibility of reaching the trigone, forced upwards by the big prostate, rendered the operation impossible. Then it was that, in the remembrance of the teaching of our old master, help came to us, and in following his direction, and forcing the catheter through the enlarged prostatic lobe, we found relief alike for our patient and for the anxiety which beset us.

In the treatment of stricture he was proficient, and no more lasting memory does one possess of student days than the manner in which he managed a bad case of retention, the perseverance and the care he displayed, and the wonderful way in which his long and pliant fingers guided the instrument.

The special site of stricture—not in the membranous portion of the urethra, the rarity of enlarged prostate complicating such a condition when it is markedly developed, the use of the probe pointed steel staff in its detection and as a measure of treatment, and the benefits likely to follow the non-passage of the instrument over the prostatic portion and neck of the bladder,—such points were always touched upon and readily kept in remembrance. The means by which we can best and most safely treat stricture were according to his teaching few in number, the cases adapted for each method were readily classified, and the results likely to follow their employment didactically stated.

Of internal urethrotomy he had such distrust as almost

amounted to injustice, because, as he believed, the incision was made in the dark and without safe guidance, and therefore hæmorrhage and infiltration were difficult to avoid.

Vital dilatation, the old plan of Liston, Holt's method, in which he had much confidence, and in those rarer and more obstinate cases in which, associated with a tight stricture, there is suppurative action in the perineum, he found the method of Mr Syme an operation as safe in performance as it was satisfactory in result. It is not difficult to bear in mind the simplicity and directness of teaching such as this, and inasmuch as it is teaching upon which we can rely with the fullest confidence, the mature fruit of an especially rich experience, we must be thankfully grateful for it.

Gentlemen, such are some gleanings from the life-work of James Spence. It has been difficult for me, looking over the vast field of that work, to find in it special topics for illustration, for the richness of the harvest is so equally great that I knew not well where to glean. And now that my subject is finished, I cannot but feel how far short I have fallen in my endeavour to manifest the value of the work he did, for the gathering power I possess has often doubtless missed the ripest grain in the portion with which I have dealt, and the richness of some that I have gathered is hidden from ready recognition in the forceless way in which I have presented it to you. My hope, however, rests in this, that inasmuch as most of those now listening to me knew the worth of the man of whom I have spoken, and the high position he held as a surgeon, in what I have said there may be sufficient to stir old memories and to recall, what indeed requires at times recall with most men, the recognition of the source from which those lessons came to them, upon which their own success in their profession has had its best foundation.

Fortunately for us now, as for those who, as the years pass, will be our successors, the sense of responsibility which came to him as a Professor in the University, and the necessity of impressing upon his students the lessons that he taught, led to the publication of his *Lectures on Surgery*, and there one finds that he lives again in the stores of experience left behind him.

Somewhere in her works the gifted authoress of *Adam Bede* writes:—"It were a blessed lot to die in just finishing a book if it could be a good one—I mean, it is blessed only to quit activity when we quit life." Such was the lot of James Spence, for he died just as he finished a book which will ever remain a grand memorial of his knowledge and of his skill. Placed as I am in the midst of a wide rural district, and brought into frequent contact with many country doctors, I have it from some of them that in the midst of a surgical difficulty, when time is of moment, and no skilled help is within reach, they can ever turn with confidence to the aid they have beside them in the written record of the matured experience of Mr Spence.

"Why should our pride make such a stir to be
And be forgot! What good is like to this,
To do worthy the writing; and to write
Worthy the reading and the world's delight?"

Such a man leaves behind him a wider good than the loss his personal presence can take away, for his teaching endures, and as the vibratory force communicated to the air when one speaks lasts long after the voice which gave it origin is silent, so each great teacher teaching others his ways of thought, and thus awakening that which again will never slumber, lives an abiding and growing influence in the students he has taught. Thus his example and the traditions of his work will survive and influence surgery long after we, the Harveians of to-day now reverencing his memory, have passed to our rest.

The value of medical education in Edinburgh has been long recognised; to-day its school is larger than ever, and we its graduates, who take just pride in this prosperity, would fall far short of our duty did we not from time to time recall to memory the great men who have gone from us, but the honour of whose names will never fade, because upon them truly does the foundation of our scholastic greatness rest.

Robert Christison, John Goodsir, James Simpson, James Syme, the compeers of James Spence, have with him passed into the silent land, but of them and of him I may say that if earnest and good work well done, if the nurturing of a school which is now the strongest in the kingdom, be a title to honourable remembrance, then in the Pantheon of Scotland's men of science they all must hold a lasting place. "*Ultimus Romanorum*" was graven upon the tomb of Cato, and it has been written by the genial and gentle Dr John Brown of Sir Robert Christison; but confident in the belief that other wise Romans lived after Cato's time, I take it that some yet remain to us, and that James Spence was one of the last to leave us.

We live admittedly in an age of progress, when the great thing which is done to-day suffers eclipse on the morrow, and yet, uniquely rich as this city is in the highest surgical talent, I believe it has not produced another man who can make us forget his loss.

It is not only affection for Mr Spence that has prompted this record to-day,—the value of his teaching and the debt I owe for it are present to me each day of my life,—but it seemed opportunity for just praise in which we might all join, for entertaining a memory which it sometimes seems to me tends to pass too quickly from "the places of his youth," and one which regarded in after days, when Time, having foreshortened the landscape, will have left only the strong parts of his work visible, must ever be held in high and grateful appreciation.

Spence has left a name to which Scottish Surgery will ever point with pride, and the influence of whose lifework will be long

enduring. How long, however, who can tell? for of him and of all men it is true, as our Laureate sings—

“We pass ; the path that each man trod
Is dim, or will be dim, with weeds ;
What fame is left for human deeds
In endless age ? It rests with God.”

IX.—A CONTRIBUTION TO THE DETERMINATION OF SEX, DERIVED FROM OBSERVATIONS MADE ON AN AFRICAN TRIBE.

By R. W. FELKIN, M.D. (Marburg), F.R.S.E., etc.

(*Read before the Edinburgh Obstetrical Society, 21st July 1886.*)

In *Uganda and the Egyptian Soudan*, which the Rev. C. T. Wilson and I published in 1882, the following sentences will be found at page 150, vol. i,—“The female population (of Uganda) is largely in excess of the male, the proportion being about three and a half to one. This excessive preponderance of the females over the males is due to three causes:—

“I. Careful observation has established the fact that there are a good many more female births than male, and on taking the groups of children playing by the roadside there will always be found to be more girls than boys.

“II. The Waganda are constantly at war with one or other of the nations round them, and their battles, being hand to hand encounters, are fearfully destructive. In one engagement which came under my immediate notice, fifty per cent. of the Waganda warriors were killed, and, as they gained the day, the loss of their opponents must have been even greater.

“III. The rule with the Waganda, when they have taken a town or district, is to put all the full-grown men to death, and to take the children and women prisoners; and as the Waganda are almost always at war, there is a constant influx of women, who are distributed among the chiefs and successful warriors.”

In doing my part of the work on which these statements are made, I jotted down some figures, which I summarized in a paper I read before the Royal Society of Edinburgh on May 3rd, 1886, as follows:—“The result of inquiries made into the history of 300 pure Waganda women was that 291 had children, and of the first births 144 were males, 147 were females. Of 500 imported women into whose history I inquired, 482 had children—of the first births only 79 were males, and no less than 403 were females.”¹

These figures were rather startling to me, and set me wondering

¹ “Notes on the Waganda, a Central African Tribe.”

how they might be explained. After a good deal of thought, I have come to the conclusion that there is only one possible explanation, and I propose, as briefly as possible, to set that explanation before you to-night, and trust that it may be of some little interest to the Fellows of this Society.

In order to avoid any misunderstanding, I must state that the notes on which I base my theory were made partly in Rubaga, the capital of Uganda, in part on a journey I made from Rubaga towards the Nile to the east of that place, and lastly, on my march from the capital to the northern frontier of Uganda, on my way home in 1879. I also made some other observations, which will serve as a control, in the Egyptian Soudan and on the east coast of Africa.

With the total population of Uganda, and with the excess of females over males, I have, on the present occasion, nothing to say, save to call your attention to the very marked difference found there when compared with the statistics of other countries, but this excess is, I think, fully explained in the quotation I made from *Uganda*.

In a paper by Sir R. W. Rawson, page 153, *Bulletin l'Institut International de Statistique*, tome i., 1ère et 2ème livraisons, année 1886, I find the following facts, viz., that in England and Ireland there are 49 males to 51 females; in Scotland there are 48 males to 52 females; in the whole of Europe, including Russia, there are 97·4 males to 100 females; in the United States of America there are 51 males to 49 females; as compared with 100 males to 350 females in Uganda.

In only four European states do we find an excess of males over females, viz., in Italy there are 100·5 males to 100 females; in Servia, 103·6 males to 100 females; in Roumania, 105·9 males to 100 females; and in Greece, no less than 113·1 males to 100 females.

In looking over my notes made in Uganda, I asked myself the question, How is it that so many of the women imported into Uganda bear such an excess of female children in their first pregnancies? for I found that among the pure Waganda women the excess of first female births was comparatively small, viz., 100 males to 102 females, as compared with 100 males to 510 females in first births from imported women; and that in subsequent pregnancies of these imported women a more equal ratio prevails, viz., about 100 males to 137 females, although this is a far higher ratio of female births than obtains in any European state.

The only theory which occurs to me, and which I confess seems to answer the question I have proposed, is that "*the temporarily superior parent produces the opposite sex.*"

I must now proceed to explain how I think that this theory fits in with my facts.

The Waganda are a very warlike race; they are nearly

always at war with some of their neighbours; they are disliked and dreaded by all the surrounding tribes. It is their custom to kill all the grown-up males and very old women when they have conquered a village or district, and they lead away captive all the boys, young women, and girls. The boys are subsequently sold to the Arab slave-dealers; the girls and women are taken as wives. Now, with the exception of the great chiefs who command the army, no soldier is permitted to take a wife along with him to the war. The result is that, after the sack of a village, the utmost licence obtains, and the nights are spent in excess of every kind.

Now, looking at the condition of the men and women thus suddenly brought together, we find that the men are flushed with victory, are exuberant, and after having lived for many days on dried bananas, they partake freely of cattle killed for the occasion, and the native wine they have stolen aids in exhilarating them; but you must note that this native wine is not strong, and the alcohol it contains is very pure. The women, on the other hand, are frightened and sorrowful at the loss of their freedom, homes, and friends (for an African woman loves her home and friends as much as other human beings do). They are compelled to perform exhausting dances for their captors' amusement, and are then ravished, subsequently being compelled to take long marches to which they are unaccustomed.

The man, I hold, in this case is *superior*—mentally he is elated, physically he is in good condition. The woman is *inferior*—mentally cast-down and physically exhausted. What follows? An enormous excess of female children. Therefore in this case, at least, the *temporarily superior parent produces the opposite sex*.

Unless I am much mistaken, my control observations tend to uphold this theory, for I found that of the women captured by the slave-raiders in Central Africa, and brought down to the East Coast, either near Zanzibar or through the Soudan to the Red Sea, those who had been impregnated on the way usually produced female children.

In this case also the same factors are at work—the women compelled to long and exhausting marches, to bear heavy chains, yokes, and loads, water and provisions being scarce; the men well fed, and without care. In talking with Soudan slave-dealers, I was told in answer to my inquiries that, as a rule, only women who have previously borne children are impregnated *en route*, as the young girls are generally “sewn up.” The slave-dealers said it did not matter about the older women, for they nearly always produce girls; so that, instead of having only one slave to sell, they have a woman and a female child.

I must next look at the condition of the women imported into Uganda after their arrival, and when they have been distributed to men as rewards for service in the field. Other factors now come into play, which may or may not uphold my theory.

Dividing the Waganda men into three classes, there are, first, the chiefs, who have large harems; secondly, men who have several wives (six to twenty); and lastly, those who have only one or two. This last class do all in their power to marry pure Waganda women. Why? Because the pure Waganda women elongate their *labia minora*, and the Waganda prefer such women, unless they can always have a fresh supply. They think that the result of the elongated labia is an increased desire on the part of the women, and hence an enhancement of their own pleasure. It is found as a consequence that in the families of the poorer classes the sexes are as evenly balanced as in Europe.

Among the other classes the men do undoubtedly commit great excesses, but their wives, if they are imported women, have all the hard work to do, and are therefore *inferior*. Against this, however, must be noted the fact that from the time they become pregnant they live separate from their husbands till such time as they have weaned their children, which is at about two years of age.

The ratio of female births after the first among these imported women is more nearly like that of pure Waganda women, but it is still far higher than in Europe, viz., about 100 males to 137 females. I can only throw out a hint as to a possible support of my theory in the examination of Europeans. I have not worked out this point fully, but I find that in the majority of cases in which a child is born in England under ten months after marriage in the higher classes after a "*honeymoon*" it is male; in the lower classes, and where there has been no "*honeymoon*," it is female. Why this should be the case is too obvious to specify.

Before concluding this paper I should like to call your attention to two other points of interest which are brought out by my observations:—first, the small percentage of women who *appear* to be sterile in Uganda. In 300 pure Waganda women observed, only 9, or 3 per cent., had no children. In 500 imported women observed, only 18, or 3·6 per cent., were childless, as against about 15 per cent. of women who, I believe, are sterile in England. The second point is the number of children born of these 800 women. Of the 291 pure Waganda women who had children, 74 had 1 child, 35 had 2 children, 140 had 3, 36 had 4, 2 had 5, 1 had 6, and 3 had 7. Of the 482 imported women who had children, 79 had 1 child, 260 had 2 children, 107 had 3, 37 had 4, 1 had 5, and 2 had 6.

Circumstances have prevented me from elaborating this paper as I should have wished. I give it for what it may be worth, for I am of opinion that any facts which an explorer can lay before the public should not be laid aside, but produced for the benefit of scientific men. I am well aware that a great mass of statistics must be brought together to prove any point. I have given what I possess, and hope others will do the same.

X.—AN OUTBREAK OF CEREBRO-SPINAL FEVER.

By T. J. MACLAGAN, M.D., M.R.C.P., Physician in Ordinary to their Royal Highnesses Prince and Princess Christian of Schleswig-Holstein.

(Continued from page 150.)

CASE V.—J. K., aged 4, lived close to the D.'s, and was much with them. About the middle of January illness commenced with vomiting and pain in head and back. For several days before admission was delirious and calling out as if in pain. His mother noticed for the first time on the day before his admission to hospital that his body was dotted over with red spots. Was brought to hospital on 24th Jany.

24th Jany.—Is very restless; tongue dry; breathing very hurried, expiration forcible and short; chest normal; eyes clear; over trunk and limbs is a sparsely distributed red rash, not elevated, disappearing on pressure; temperature, $102^{\circ}8$ (evening).

25th Jany.—Is restless and distressed; has a few red spots on body about the size of a split pea, irregular in outline, disappearing on pressure, and not elevated; to have milk and beef-tea; body to be sponged; and to have 6 grs. of bromide of potass every three hours; pulse, 136; respirations, 48; temperature, $101^{\circ}5$. Vesp.: pulse, 136; respirations, 40; temperature, 101° .

26th Jany.—Pained and distressed aspect; restless night; is quite conscious; scanty rash of red spots as last noted; head is retracted; nurse states that the back is sometimes arched; one stool, natural in colour and consistence; urine has faint trace of albumen, sp. gr., 1030; pulse, 136; respirations, 40; temperature, $101^{\circ}2$. Vesp.: pulse, 132; respirations, 38; temperature, $100^{\circ}2$.

27th Jany.—Quiet night; head retracted and spine arched; muscles do not feel stiff; eruption paler, similar in character; pulse, 124; respirations, 48; temperature, $102^{\circ}4$. Vesp.: pulse, 130; respirations, 44; temperature, $101^{\circ}6$.

28th Jany.—Quiet night; no arching of back; is very weak and depressed; does not take nourishment well; rash less distinct and less of it; wine, ζ iv.; pulse, 138; respirations, 40; temperature, 102° . Vesp.: pulse, 132; respirations, 40; temperature, 103° .

29th Jany.—Pinched expression and sunken aspect; eyes clear; is very weak; cannot open mouth, apparently from trismus; rash as yesterday; pulse very feeble, 136; respirations, 32; temperature, $102^{\circ}4$. Vesp.: pulse very feeble, 136; respirations, 40; temperature, $102^{\circ}6$.

30th Jany.—Pinched and depressed aspect; very quiet and prostrate, can scarcely swallow; beef-tea enemata, with wine; pulse scarcely perceptible; respirations irregular; temperature in morning, $102^{\circ}5$; in evening, $101^{\circ}6$.

31st Jany.—Sinking; nothing on skin; is almost unconscious; temperature in morning, $101^{\circ}4$; in evening, 101° .

1st Feby.—Died at 5.40 A.M. Post-mortem thirty hours after death. No eruption, no markings on skin; no rigidity; decided incurvation of great toes (pedal contraction). Heart and lungs normal; liver slightly enlarged; spleen rather soft; kidneys slightly congested; intestinal glands, solitary and agminated, quite natural in appearance, nor even congested.

The only abnormalities were found in the head. On removing the calvarium, the dura mater presented a normal appearance; but on opening the membranes there flowed away a largely increased quantity of cerebro-spinal fluid. There was no general congestion, or undue fulness of the sinuses; the choroid plexus was normal; and there was no increase of fluid in the ventricles. The pia mater covering the posterior lobes of the cerebrum was abnormally and minutely injected, and presented on its surface numerous spots both of redness and of haziness,—the former congestive, the latter lymph. The base of the brain was natural in appearance, as also was the substance of the cord. The only abnormalities were the large increase of cerebro-spinal fluid, and the marked injection of the pia mater covering the posterior lobes.

At 5 Bruce Street resided J. O'N., his wife, and two sons, John, aged 20, and James, aged 13. In the second week of November John was seized with an illness which commenced with shivering and pain in the head and back, and was characterized during its course by fever and prostration. He was in bed for three weeks, and off work for six. He had spots on his skin. James took ill in the same way at the end of November, and had a similar illness lasting for six weeks altogether. The father was similarly seized on the 30th December, but continued at work till the 5th January. He felt very weak and ill for some weeks. Spots were not noted either in his case or James'. Mrs O'N. took ill the same day as her husband, and was sent to hospital on the 7th January.

CASE VI.—C. O'N., aged 50, was seized on 30th Dec. with shivering, sickness, and severe headache. Since then has had pains all over, and general prostration. The bowels have been loose.

7th Jany.—State on admission. Is a little deaf, but perfectly intelligent; eyes clear; tongue very dirty; has a slight cough; chest sounds normal; has a rash on skin which disappears on pressure, but not well seen by gaslight; pulse, 112; respirations, 34; temperature (in evening), 104°·8.

8th Jany. (10th of illness).—Was rather restless; tongue dirty; urine albuminous, sp. gr. 1021. Over skin of trunk, both before and behind, is a sparse eruption of rose-red spots, of irregular outline, not elevated, disappearing on pressure; pulse, 112; temperature, 103°·4. Vesp.: pulse, 116; temperature, 103°·2.

9th Jany.—Restless night; tongue thickly furred; bowels freely

moved once; rash quite gone; pulse, 120; temperature, 103°. Vesp.: pulse, 120; temperature, 104°·2.

10th Jany.—Expression natural; intellect quite clear; tongue dry. The rash has come out again over the trunk in the form of light red spots, varying in size, of irregular outline, not elevated, disappearing on pressure; pulse, 120; temperature, 103°·2. Vesp.: pulse, 118; temperature, 104°·2.

11th Jany.—Passed a quiet night; is quite intelligent; is sore all over; skin hyperesthetic; rash the same as yesterday; pulse, 116, feeble; temperature, 103°. To have 4 ounces of wine. Vesp.: pulse, 120; temperature, 103°·4.

12th Jany.—Wanders at times; distinct muscular startings and twitchings; is not delirious; tongue dry; rash unchanged; pulse, 120; temperature, 102°·2. Vesp.: pulse, 100; temperature, 102°·4.

13th Jany. (15th of illness).—General condition the same; pulse, 112; respirations, 32; temperature, 102°·4. Vesp.: pulse, 108; respirations, 30; temperature, 103°·2.

14th Jany.—Passed a good night; has improved expression, and says she feels better; tongue moist at edges; rash fading; pulse, 120; respirations, 28; temperature, 99°·4. Vesp.: pulse, 100; respirations, 24; temperature, 100°·8.

15th Jany.—Continues to improve; rash gone; pulse, 104; respirations, 22; temperature, 98°. Vesp.: pulse, 92; respirations, 24; temperature, 99°·6.

16th Jany.—Pulse, 92; temperature, 97°. Vesp.: pulse, 88; temperature, 99°·2.

17th Jany.—Pulse, 96; temperature, 97°·4. Vesp.: pulse, 92; temperature, 99°·4.

18th Jany.—Morning temperature, 97°·6; evening, 99°·2.

19th Jany.—Morning temperature, 99°·2; evening, 99°·4.

20th Jany.—Morning temperature, 97°·1; evening, 98°·4.

Mrs O'N.'s was an undoubted case of cerebro-spinal fever, with the characteristic rose rash of that disease. There is no reason to doubt that her husband and sons suffered from the same disease; and this view was taken by the medical man (Dr Young) who saw them during their illness. At the time he naturally enough thought that they were suffering from typhus, which is common in Dundee; but on hearing of the nature of Mrs O'N.'s illness said he had no doubt that theirs was the same.

At 2 Glamis Street resided G. M., with his wife and two children,—Isabella aged 14, and Charles aged 12. In the second week of January Isabella was seized with rigors, headache, sickness, and pains all over. Was conscious and intelligent all through her illness. She was confined to bed for a fortnight. She was seen several times by Dr Steel-Moon, who said that she had no spots on the skin, and regarded her case at the time as a mild attack of typhoid. The illness of her parents coming immediately

after leave little room for doubt that her fever, like theirs, was cerebro-spinal, and in this view Dr Moon concurred.

CASE VII.—C. M., aged 55, the mother of the girl referred to, was seized on the 3rd February with sickness, a feeling of cold, and pain in head and side. Had been looked after by some neighbours, who stated that she had been restless, sleepless, and very confused. They volunteered the statement that her head had been drawn back. Was sent to hospital on 8th day of illness.

10th Feby. (8th day of illness).—Has febrile aspect; intellect clear; tongue dry; eyes not injected; pulse, 116; respirations, 28; temperature (evening), 103°. On the trunk and extremities is an indistinct rash (to the eye not unlike typhus mottling) consisting of spots which vary in size, are not elevated, and disappear on pressure. Urine contains a considerable quantity of albumen; sp. gr., 1024.

11th Feby.—Quiet night, wandering at times; answers rationally; is depressed and sunk in bed; pupils small; rash unchanged; has several small petechial spots on hips; bladder distended and requiring catheter; cardiac systole feeble; pulse, 116, feeble; respirations, 30; temperature, 102°·8. To have milk and beef-tea frequently, and half an ounce of wine every two hours. Vesp.: pulse, 132; respirations, 36; temperature, 103°·8.

12th Feby.—Passed a quiet night, but moaning at times; is much sunk in bed; takes no notice of anything, and makes no response when spoken to. Rash not so distinct; petechiæ unchanged; urine albuminous, sp. gr., 1023; requires catheter; bowels moved once. Pulse, 132, very feeble; respirations, 32; temperature, 103°. To have whisky instead of wine, a dessert-spoonful every hour. Vesp.: pulse, 140; respirations, 36; temperature, 103°·4.

13th Feby. (11th of illness).—Except for moaning has passed a quiet night; is much sunk; face dusky; rash almost gone—but there remain a number of petechial spots on hips; pulse irregular and scarcely perceptible; temperature, 101°·6.

Gradually sank and died in the afternoon.

Section forty-two hours after death. The head only was examined. There was nothing peculiar or abnormal in the external appearance of the dura mater. On opening it there flowed away a much more than normal quantity of cerebro-spinal fluid. On removing it, the pia mater covering the whole of the upper surface of the cerebral and cerebellar lobes was seen to be the seat of a bright red congestion of its minute bloodvessels, the course of which could easily be traced by the naked eye. The whole surface was markedly and minutely injected, with here and there milky-looking patches of lymph effusion. These patches varied in size from mere dots to bits as large as a sixpence, but of irregular shape. The ventricles and choroid plexus were normal in appearance, and there was no

congestion of the interior of the cerebral or cerebellar substance. The only abnormalities were the minute capillary injection of the pia mater, lymph effusion into its meshes, and the increased quantity of cerebro-spinal fluid.

Her husband recovered from his fever, but died of erysipelas during convalescence.

There can be no doubt that the three members of the M. family all suffered from the same disease. The diagnosis of cerebro-spinal fever was made during life, and in Mrs M.'s case was verified by examination after death. Mr M.'s case bore a strong resemblance to typhus; and occurring alone, or still more during the prevalence of typhus, would almost certainly have been taken for that disease, so closely did the rash to the eye resemble that of typhus. The points wherein it differed from it were—(1.) That it did not come out till the eighth day; (2.) That at that time it disappeared on pressure, though a few days later it only faded; and (3.) That all through the illness it was more vivid in colour than is the typhus rash.

It is to be noted, too, that in Mrs M.'s case the rash was more scanty, but the cerebral symptoms and general severity of the malady much greater than in the case of her husband, who had a very copious eruption, but got well over his fever, dying of a sequela. In typhus the copiousness of the eruption is directly as the severity of the seizure—a scanty eruption indicating a mild attack.

Unfortunately the friends who in Mrs M.'s case sanctioned only the examination of the head, in her husband's case refused to allow even that.

At 26 Foundry Lane resided Mrs B., with one son and three daughters, H., C., and J. They lived in one room. H. B., aged 17, was seized on the 2nd February with shivering, sickness, and pain in the head and back. Her brother G. was similarly seized on the 23rd, Mr B. on the 24th, and C. on the 26th February. They were all treated in hospital, and were all well-marked cases of cerebro-spinal fever, with the rash, the hyperesthesia, the general distress, the cerebral breathing, all well marked; they had also very free desquamation of the skin. I give Mrs B.'s case, because of its unique mode of fatal termination.

CASE VIII.—Mrs B., aged 47, was seized on 24th February with shivering, sickness, and pain in head and limbs. Came to hospital five days after.

1st March (sixth day of illness).—Is quite sensible; cheeks flushed; eyes and expression natural; breathes quietly; has no cough; urine contains a good deal of albumen, sp. gr. 1018; bowels moved by medicine. Pulse (vespere), 116; respirations, 28; temperature, 101°·8.

2nd March.—Passed a quiet night; tongue moist; eyes suffused; has slight wheeze in chest; on both cheeks, on chin, and on throat, but nowhere else, is a bright roseolar rash; the spots

vary in size, have no regular outline, disappear on pressure, and are not elevated above the surface; bowels moved; pulse, 108; respirations, 26; temperature, 102°·4. Vesp.: pulse, 112; respirations, 28; temperature, 103°·4.

3rd March.—Passed a quiet night; still has rash on neck and face, nowhere else; tongue moist and dirty; eyes natural; has distressed aspect; pulse, 108; respirations, 24; temperature, 102°·4. Vesp.: pulse, 112; respirations, 24; temperature, 102°·8.

4th March (ninth day of illness).—Was restless and distressed during the night; got much worse early in the morning, and at 6.30 A.M. the resident medical officer was sent for. He found her cold, pale, and evidently sinking. The pulse could not be felt; the temperature was 98°. She was freely stimulated, but gradually sank, and died at 8.30.

Post-mortem, twenty-seven hours after death. Livid discoloration of shoulders, back, and hips, evidently post-mortem. No spots or other marks on skin.

Chest.—Heart soft and pale; lungs normal.

Abdomen.—On opening this the peritoneal cavity was seen to contain a large quantity of dark blood, liquid and clotted. A large clot lay in the pelvis. The spleen was found to be ruptured; its substance was soft, diffuent, and of a mahogany colour. Over it was a firm dark clot of blood, which fitted on to its surface, and took the shape of the spleen. It had formed under the capsule, a detached piece of which, about an inch square, lay on its surface. The liver was soft, and of a mahogany colour; weight, 59 ounces. The kidneys were darker in colour than natural. The abdominal glands were not enlarged. The intestinal glands were quite healthy.

Head.—The dura mater was of normal appearance. There was slight venous congestion of cerebral surface, and a rather more than normal quantity of cerebro-spinal fluid, but nothing very marked. There was distinct, but by no means excessive congestion of the minute vessels of the pia mater covering the upper surface of the cerebral and cerebellar lobes. The whole cerebral surface was covered with a milky haziness, most marked along the course of the vessels. The ventricles and cerebral substance were normal in appearance. There was no increased size of choroid plexus. The veins of the spinal cord were more than usually loaded, and there was increased vascularity of the membrane covering the cervical and lumbar portions.

Rupture of the spleen has been known to occur in typhus, in typhoid, and in relapsing fever. In all it is a rare accident. This is the only instance of its occurrence in cerebro-spinal fever of which I am aware.

Next door to the B.'s a boy named Page also had the fever, and was treated in hospital.

(To be continued.)

XI.—CLINICAL AND PATHOLOGICAL MEMORANDA.

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VI.—*Hæmorrhagic Apoplexy and Miliary Aneurisms.*

THE ordinary form of intra-cerebral hæmorrhage—sanguineous apoplexy or cerebral hæmorrhage *par excellence*—which, as Charcot puts it, bears the same relation to the other forms of cerebral hæmorrhage as true hereditary epilepsy bears to the various symptomatic epilepsies, is comparatively seldom met with in general hospital practice. Possibly this is due to the facts that cerebral hæmorrhage is essentially a disease of old age, and that, as Hilton Fagge has suggested, a severe attack of apoplexy in an old person is apt to be looked upon as so hopeless that the patient is not removed to hospital, but allowed to remain and die at home.

During the three years that I acted as pathologist to the Edinburgh Royal Infirmary, 686 cases were examined post-mortem, and of these ten, or 1·45 per cent., were cases of ordinary cerebral hæmorrhage; while of 200 cases which I examined post-mortem in the Newcastle-on-Tyne Infirmary, and of which I have notes, four, or 2 per cent., were of this nature. The more important pathological features of these fourteen cases are detailed in the annexed Table. Summarizing that table, it will be seen that, of the fourteen cases, nine were males and five females; the mean age was 50 (the age in two cases is not stated in the notes), the youngest being 34, and the oldest 65. In eight cases the hæmorrhage was into the left, and in six into the right side of the brain. In twelve cases the main hæmorrhage was situated in the opto-striate region—the “seat of election” for cerebral hæmorrhage, as I am in the habit of terming it; in one case the main hæmorrhage was into the head of the corpus striatum; and in one case into the pons Varolii. Of the twelve cases in which the main hæmorrhage was in the opto-striate region, the optic thalamus was the chief seat of the lesion in two cases; in one of these there was a second hæmorrhage into the head of the corpus striatum of the opposite side; in one case the hæmorrhage extensively invaded the crus cerebri; and in one case there were several small hæmorrhages into the pons Varolii. In eleven cases the hæmorrhage was quite recent; in two cases it was of some weeks’ duration; and in one case it was old.¹ In two cases the extravasation was small (the size of a hazel nut and a cherry

¹ The remains of small hæmorrhages of old date were certainly present in some other cases; the record of their presence must either have been omitted by the clinical clerk in transcribing the notes, or have escaped my observation in going through the post-mortem ledgers.

respectively); in one case the whole of the left side of the pons Varolii was destroyed; in two cases the clot was the size of a hen's egg; in two cases of an orange; and in seven cases it is noted as having been very extensive (*i.e.*, larger than an orange); in one of these cases almost the whole of one hemisphere of the brain was destroyed. In five cases, the hæmorrhage was confined by the brain tissue, and in nine cases it had extended either into the ventricles or on to the surface of the brain. In three of the nine cases in which the hæmorrhage had burst through the cerebral substance, it had made its way into the adjacent lateral ventricle; in three cases it had ruptured into the lateral ventricle on the same side, and thence extended through the *iter* into the fourth ventricle, and on to the surface of the brain; in two cases it had ruptured into both lateral ventricles; in one of these cases the hæmorrhage had also ruptured through the brain tissue into the superior longitudinal fissure; in the case of hæmorrhage into the pons Varolii, the blood had broken through the superficial fibres of the pons into the fourth ventricle. In seven cases the large arteries at the base were markedly, in four cases slightly, and in three cases not at all atheromatous; in one of the cases in which there was no atheroma, the basilar and some of the large vessels of the circle of Willis were markedly dilated and tortuous.

A systematic search for miliary aneurisms was not made in all the cases; but in every case, *with one exception*, in which a careful search was made, miliary aneurisms were found. In three of the cases in which miliary aneurisms were present, the great arteries at the base were either not at all or only very slightly atheromatous,—a result which is quite in accord with the statement of Charcot and Bouchard, that these minute aneurisms are the result of peri-arteritis and not of atheroma (sclerotic endo-arteritis), and that atheroma is not, as was formerly supposed, the lesion which usually gives rise to the ordinary form of hæmorrhagic apoplexy.

In eight of the cases in which the condition of the heart was ascertained, the left ventricle was more or less hypertrophied without valvular lesion in seven instances; in two of these cases it was more or less dilated as well as hypertrophied, and in one case the muscular fibre was markedly fatty. In one case there was well-marked mitral stenosis, with recent vegetations on the aortic and mitral valves. In the six cases in which the condition of the kidneys was ascertained, there was marked cirrhosis in two cases, slight cirrhosis in three cases, and in the remaining case the kidneys were healthy. In the nine cases in which the condition of the lungs was ascertained, there was more or less hypostatic pneumonia in eight instances. In one case the lower lobe of one lung was in a condition of red hepatization.¹

¹ In those cases in which the condition of the heart, kidneys, and lungs was not ascertained, the permission of the friends (which is necessary both in the Edinburgh Royal and the Newcastle-on-Tyne Infirmarys) could not be obtained to examine the whole body.

DR BYROM BRAMWELL IN THE EDINBURGH ROYAL

s.	Condition of Arteries at Base of Brain.	Condition of Heart.	Kidneys.	Lungs.
	Extensive atheroma.	Not ascertained.	Not ascertained.	Not ascertained.
l with tained	Marked atheroma.	Left ventricle hypertrophied; weight = 13 oz.	Slight cirrhosis; weights = $4\frac{1}{2}$ and 4 oz.	Commencing pneumonia, left base.
tained s.	Basilar artery tortuous and dilated, not atheromatous.	Not ascertained.	Not ascertained.	Not ascertained.
quan- th.	Somewhat dilated and atheromatous.	Left ventricle much hypertrophied; weight = 1 lb. $1\frac{1}{4}$ oz.	Not ascertained.	Hypostatic pneumonia.
	Markedly atheromatous.	Left ventricle much hypertrophied; weight = 1 lb. $\frac{1}{2}$ oz.	Typically cirrhotic; typical albuminuric retinitis.	Hypostatic pneumonia.
er, and clot.	Markedly atheromatous.	Not ascertained.	Not ascertained.	Not ascertained.
e iter, with	Slightly atheromatous.	Moderate mitral stenosis; weight of heart = 1 lb. 1 oz.; hypertrophy of left ventricle; recent vegetations on mitral and aortic segments.	Not ascertained.	Lower lobe of right lung in state of red hepatization.
er, and clot.	Slightly atheromatous.	Left ventricle dilated and hypertrophied; weight = 1 lb. 8 oz.	Not ascertained.	Hypostatic pneumonia of both lungs.
com- partly h had e 4th se.	Tortuous, dilated, and slightly atheromatous.	Weight = $14\frac{1}{2}$ oz.; left ventricle dilated; organ very fatty.	Slightly cirrhotic, very fatty.	Very oedematous, and commencing hypostatic pneumonia.
	Very atheromatous.	Heart = 10 oz., healthy.	Healthy.	Slight hypostatic pneumonia.
	Normal.	Not ascertained.	Not ascertained.	Not ascertained.
com- d with ntricle	Markedly atheromatous.	Left ventricle much hypertrophied; weight = 1 lb. $2\frac{1}{4}$ oz.	Cirrhotic.	Double hypostatic pneumonia.
tained	Not atheromatous.	Not examined.	Not examined.	Not examined.
com- d with le full	Very atheromatous.	Left ventricle dilated and somewhat hypertrophied; weight = 1 lb. $4\frac{1}{2}$ oz.	Somewhat cirrhotic and fatty.	Hypostatic pneumonia and oedema at each base.

Peri-arteritis and Miliary Aneurisms.—The result of my observations, so far as they go, but the cases at my disposal are far too few to admit of generalization, is in accord with the statement of Charcot and Bouchard, that the immediate cause of the ordinary form of cerebral hæmorrhage is usually the rupture of minute (miliary) aneurisms, and that these aneurisms are, as a rule, the result—a late and, as it were, a secondary result—of a lesion which is widely spread throughout the arterial system of the brain.

This lesion, which they have termed *diffuse peri-arteritis*, chiefly affects the minute arteries (arterioles), but may also invade the large arterial trunks at the base and their branches in the meninges on the one hand, or may extend to the capillaries of the brain on the other. All three coats of the vessel may be involved, but, as a general rule, the lesion progresses from without inwards, the outer coat being first and most affected. In this, and also in some other respects, *peri-arteritis* differs essentially from ordinary atheroma (*sclerotic endo-arteritis*), which up to the time when Charcot and Bouchard published their observations, was thought to be the lesion with which cerebral hæmorrhage was associated.

When an artery affected with *diffuse peri-arteritis* is examined microscopically, the most common condition is found to be an enormous multiplication of nuclei in the lymphatic sheath and adventitia, with atrophy and disappearance of the muscular elements of the middle coat, and it is important to note that this atrophy of the muscular fibres is unattended with fatty degeneration. In some cases—and these are probably old-standing cases in which the multiplication of nuclei has at one time been present, but has disappeared—the irregularly heaped-up masses of nuclei in the lymphatic sheath and adventitia are not seen, but these layers of the arterial coat are simply thickened, and present a striated, fibrous appearance, the adventitia being more or less closely dotted over with fusiform nuclei arranged longitudinally with the canal of the vessel. The inner coat is only affected in the later stages of the process; it may, indeed, be quite unaffected even when the other coats are extensively involved. Implication of the inner coat is manifested by multiplication of its nuclei, which lose their ovoid shape and regular arrangement. In the earlier stages of the process, the lymphatic space between the lymphatic sheath and the adventitia may remain patent, containing, perhaps, some cellular elements—fatty particles or granules of hæmatoidin—a condition which is by no means peculiar, and which is seen in many other morbid states. When the lesion is more extensive the lymphatic space is often obliterated, and the thickened lymphatic sheath and adventitia are, as it were, fused together.

In consequence of the atrophy of the muscular fibres of the middle coat, the resisting power of the wall of the vessel is diminished, and the blood pressure tends to produce dilatations

which may be of various forms—cylindrical, fusiform, moniliform, and saccular—and it is to these dilatations that Charcot and Bouchard have given the name of miliary aneurisms.

The fibrous thickening of the lymphatic coat and adventitia, which is seen in some cases, seems to be attended with some compensatory advantages, for it increases the resisting power of the arterial coat, supplying the place, as it were, of the muscular elements which have disappeared. Charcot states that miliary aneurisms are scarcely ever observed where the external coat has reached a certain degree of fibrous metamorphosis. This rule is not, however, without exceptions, as some of my own specimens clearly show (see Figs. 16 and 19).

Charcot and Bouchard have detected miliary aneurisms in every case of cerebral hæmorrhage (cerebral hæmorrhage *par excellence*) which they have examined. The number of miliary aneurisms which are present in any given case varies considerably. In some cases, only two or three have been detected, even after the most careful examination, while in others more than one hundred have been counted.

These miliary aneurisms (see Figs. 15 to 20), which are distinctly visible to the naked eye, having a diameter of one-fifth of a millimetre to one millimetre ($\frac{1}{5}$ th to $\frac{1}{4}$ th of an inch), occur most frequently, according to Charcot and Bouchard, in the optic thalami and corpora striata, then in the pons, the gray matter of the convolutions, the claustrum, the cerebellum (especially the parts in the neighbourhood of the rhomboidal body), the cerebellar peduncles, and, lastly, the centrum ovale.

Miliary aneurisms are most easily observed in the convexity of the cerebral hemispheres. After removing the pia mater from the surface of the convolutions, they are seen as little spherical, shining grains, not unlike the glomeruli of the kidney, on the summit and sides of the gyri or at the bottom of the sulci. When the aneurisms are situated in the substance of the gray matter, or at the junction of the gray with the white matter, they are best detected by making sections through the brain substance at right angles to the surface of the convolutions; but even when completely buried in the gray substance, they may often be dimly seen through the brain tissue as ill-defined, bluish spots on the free surface of the convolutions. Their detection in the walls of recent hæmorrhagic cavities is more difficult. The cavity should be laid open by a free incision, and the blood and clot which it contains allowed to escape; the brain should then be placed in a basin of water, which should be frequently renewed, without shaking, by simply inclining the vessel from time to time. In this way the clot, which is adherent to the walls, is gradually detached, and a number of fine flocculent, vascular filaments are seen attached to the edge of the cavity. On careful examination little globular swellings will be seen on the free extremities of some of the fine vascular filaments. The majority of these swellings are found, on

microscopical examination with a low power, to be blood clots, but some of them may be little globular aneurisms.

In some cases the miliary aneurisms, which have been detected adhering to the walls of recent cavities, have been found to be ruptured, and the actual source of the bleeding has in this way been demonstrated.

The miliary aneurisms are sometimes round and globular swellings springing from the lateral wall of the vessel; in other cases, fusiform or spindle-shaped, and consisting of a more or less uniform enlargement of a minute artery.

The illustrations (Figs. 15 to 20), which are very accurate copies of some of my specimens, show the appearances which the aneurisms themselves present under a low magnifying power, and some of the more important alterations in the arterial walls, which have been described above.

FIG. 15.

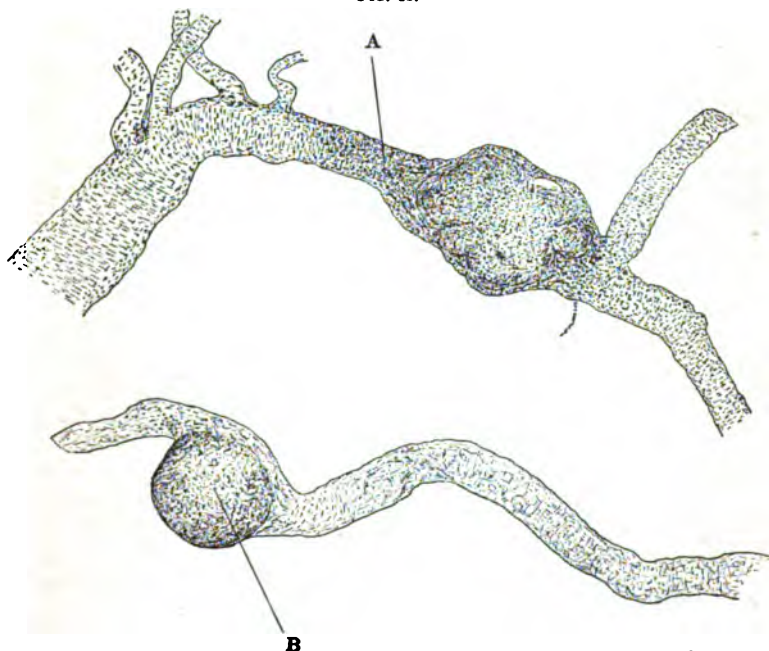


FIG. 16.

FIG. 15.—*Miliary Aneurism from a Case of Cerebral Hemorrhage (very low power).*

At A, the muscular fibres of the middle coat have for the most part disappeared, and there is a marked increase of nuclei. The walls of the aneurism are partly "fibroid," and a clear calcareous "droplet" is seen in the upper part of the wall of the sac.

FIG. 16.—*Miliary Aneurism from a Case of Cerebral Hemorrhage (very low power).*

The aneurism (B) was of a reddish-yellow colour, and is evidently of old standing. The coats of the vessel show the fibroid change characteristic of advanced peri-arteritis; the multiplication of nuclei has disappeared.

Note.—To see the details of this and the other drawings the Plate should be held about 6 inches from the eye.

FIG. 17.

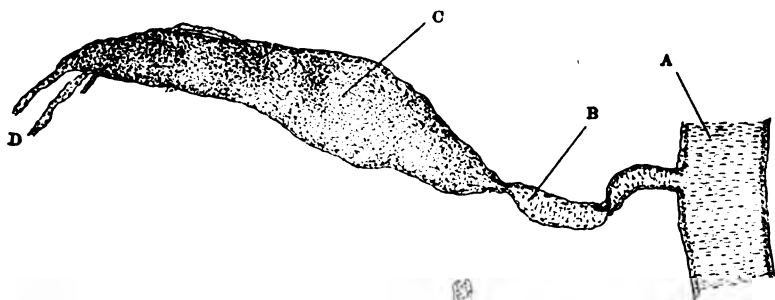


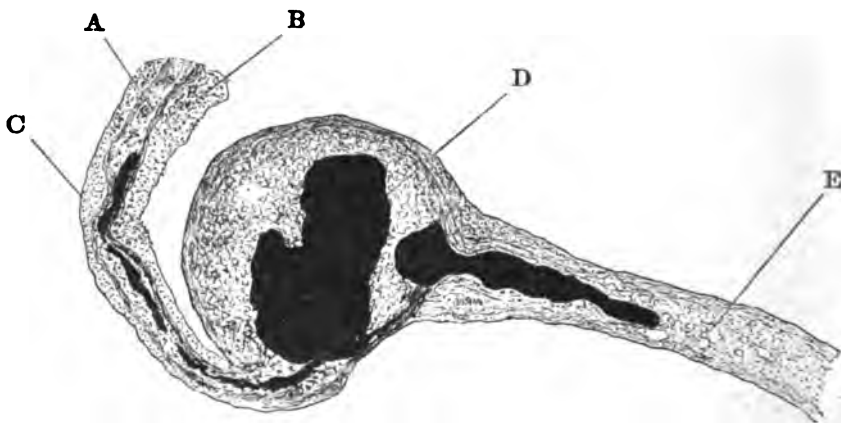
FIG. 18.

FIG. 17.—*Miliary Aneurism from a Case of Cerebral Hemorrhage (very low power).*

A, small artery which is healthy; B, arteriole, which is healthy at its commencement; C, fusiform aneurism, affecting the arteriole (B); the walls of the sac are densely infiltrated with nuclei, the muscular fibres of the middle coat having completely disappeared; D, minute vessels arising from the wall of the sac.

FIG. 18.—*Miliary Aneurism from a Case of Cerebral Hemorrhage (very low power).*

The arteriole (E), from which the aneurism springs, shows the dense nuclear proliferation of the outer coats extremely well. The wall of the sac also shows fibroid changes. F, a capillary springing from the arteriole.

FIG. 19.—*Miliary Aneurism from a Case of Cerebral Hemorrhage (very low power).*

The aneurism is an old one; the wall of the vessel leading to it shows the fibroid change of advanced peri-arteritis, and its walls are infiltrated with clear calcareous particles (E); the wall of the vessel (A) beyond the sac is markedly thickened, as the result of nuclear proliferation and fibroid thickening in the lymphatic sheath (B) and adventitia. The sac was of a reddish-brown colour; its walls were markedly fibroid, and contained calcareous particles; a dense old coagulum (D) partly fills the sac; the vessels leading to and from the sac also contain old coagula; the letter C points to a portion of the coagulum in the vessel beyond the sac. In this case (Case 5 in the table) the vessels at the base and throughout the brain were markedly atheromatous.

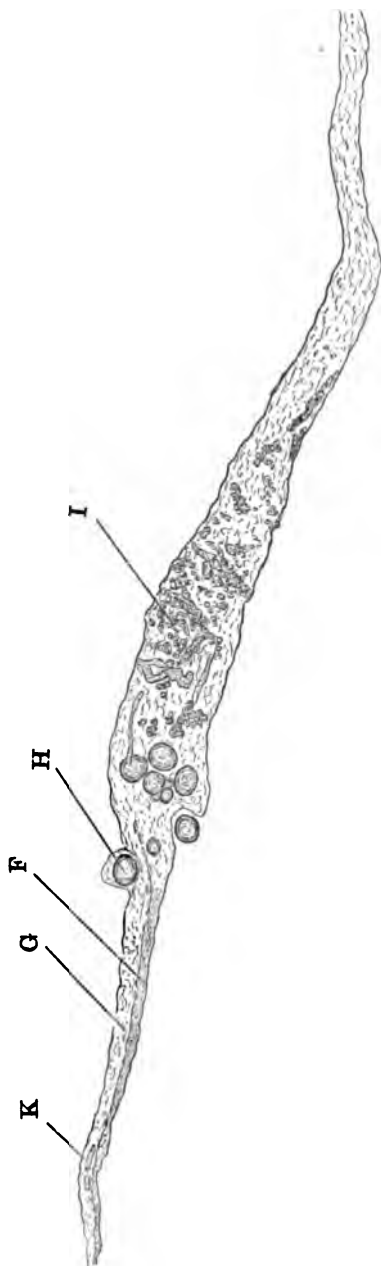


FIG. 30.—A Minute Vessel of the Brain from a Case of Cerebral Hemorrhage, showing a Uniform Dilatation (very low power).

The wall of the vessel leading to the dilatation shows the fibroid change of advanced peri-arteritis, the nuclear proliferation having disappeared; the canal of the vessel (F) beyond the dilatation is filled with blood corpuscles, which are partly degenerated, on one side (G) there is enormous thickening of the outer arterial coats; K points to calcareous particles in the outer coat; the wall of the dilatation is markedly fibroid, and infiltrated with calcareous particles, some of which (H) are round and marked with concentric rings, others (I) are irregular or branched.

"The colour of these aneurisms varies according to the state of the blood which they contain and the condition of their walls. When the wall is thin, the aneurism is of a more or less violet-red colour if the contained blood is liquid; if, on the contrary, the blood has been long coagulated, and is already transformed into fatty granules and hæmatoidin, the aneurism is reddish-brown, ochrey, or even blackish; and generally the layer of cerebral tissue immediately surrounding it presents in a less degree a similar coloration. When the walls are thickened by increase in the adventitious coat, as is sometimes the case, especially in the central portions, the aneurism is bluish if the blood it contains is liquid; grayish if the white corpuscles, which always remain to some extent, are numerous and confined in a granular stroma (*gangue*), which leaves only a limited space for the normal blood; brownish if the contents have already undergone retrograde transformations; and yellowish if there is a preponderance of fatty granules or calcareous particles. The differences in the structure of the envelope and in the nature of the contents may cause considerable variety in the consistence of the aneurism, which is sometimes soft and fragile, giving way under the least pressure, and permitting the escape of blood, whose external characters are little changed; at others, hard, like grains of sand; and at others, firm and elastic."¹

Part Second.

REVIEWS.

Investigations into some Morbid Cardiac Conditions. By WILLIAM RUSSELL, M.D., M.R.C.P. Edin., Lecturer on Pathology in the School of Medicine, Edinburgh; Physician to the New Town Dispensary, etc. Edinburgh: Bell & Bradfute: 1886.

THIS book, which contains Dr Russell's thesis, to which a gold medal was awarded by the University of Edinburgh, and the essay on the Heart in Debility, to which the Cartwright prize of 500 dollars was awarded by the Alumni Association of the College of Physicians and Surgeons of New York, is a valuable contribution to cardiac literature.

In the first chapter, entitled an Historical Inquiry concerning Inorganic Cardiac Murmurs, the author not only summarizes the opinions and teachings of living authorities, but endeavours, by quoting the views of former writers, to note the birth and trace the evolution of those opinions. In succeeding portions of the work he considers in detail the condition of the heart in debility and its

¹ Bouchard on *Cerebral Hemorrhage*, translated by Dr T. J. MacLagan, page 79.

relations to the thoracic wall, the site and mechanism of the cardiac murmurs in debility and anæmia, the vascular murmurs in chlorosis and anæmia, and after directing attention to some points connected with tricuspid murmurs and mitral stenosis, he discusses in the concluding chapter the differential diagnosis of vegetative or verrucose endocarditis.

While personally we are unable to agree with some of the more important conclusions of the author, we readily admit that many of the views which he propounds are exceedingly ingenious, that they are defended and put together with much logical ability and acumen, and that Dr Russell brings forward in their support many original clinical and pathological observations of real value, some of them likely, we think, to hold their ground as of permanent importance. But whether Dr Russell's views are ultimately accepted or not, they cannot but be useful, for they are so well reasoned out and so suggestive that they must attract attention and stimulate investigation and thought; in this way they must tend to elucidate and settle the important questions to which they relate. The work, based as it is on sound original clinical and pathological investigations, is alike creditable to its author and to the Edinburgh School of Medicine.

Insomnia and other Disorders of Sleep. By HENRY M. LYMAN, A.M., M.D., Professor of Physiology and of Diseases of the Nervous System in Rush Medical College. Chicago: W. T. Keener. London: Trübner & Co.: 1885.

THIS is a most excellent work, written by a physician of wide culture and decided originality. Discussing the causation of sleep in the first place, the author is of opinion that it must be sought in the molecular structure of the brain, and not in the fluctuations of the blood current; and that sleep, therefore, must be regarded as the cause, not the consequence, of the cerebral anæmia found during slumber. With this view we are entirely in accord. It is now beyond doubt that certain nervous symptoms, such as Cheyne-Stokes' phenomenon, for example, which is known to occur normally in sleep, are caused by exhaustion of the cellular elements of the nervous structures, and not by any circulatory disturbance; and from analogy we are of necessity led to regard sleep as also due to a depression in the functional activity of the cellular elements of the brain.

Dr Lyman approaches insomnia from two points of view, according as it is caused by irritation of the peripheral portions of the sensory apparatus, or by morbid states of the central nervous organs, and enters fully into the subject of remedies and treatment. Dreams, somnambulism, and hypnotism receive full attention. On the subject of clairvoyance the author thinks there is nothing more

wonderful in its phenomena than in the demonstrated possibility of telegraphing across the sea without the intervention of an electric wire. A sufficiently sensitive piece of mechanism in the water at either side of the sea will allow of communications transmitted by a diffusion of impulses through the water; and in the same way, he thinks, it is quite reasonable to believe in the possible existence of a brain so delicately organized as to be capable of reacting to impressions that are too diffuse and too feeble to arouse the ordinary apparatus of sensation.

We have received great pleasure from the perusal of this interesting work, and can heartily recommend it to all those who are interested in psychical phenomena.

On the Supra-Pubic Operation of Opening the Bladder for the Stone and for Tumours. By Sir HENRY THOMPSON, F.R.C.S., Surgeon Extraordinary to His Majesty the King of the Belgians, Consulting Surgeon to University College Hospital, &c., &c. London: J. & A. Churchill, 11 New Burlington Street: 1886. Pp. 57.

THE object of this interesting and very readable treatise is to show that the supra-pubic operation of lithotomy, if performed as Sir Henry Thompson advocates, is a simpler and safer operation for adults than that of lateral lithotomy. "For extremely large calculi . . . there is no proceeding at all comparable to the high operation. . . . I will go further, and I will add, that it is my belief that in the hands of most operating surgeons this proceeding will prove a safer and a far easier one than lithotripsy, with all its advantages, for hard stones when they have arrived at about $1\frac{1}{2}$ to 2 oz. in weight."

The improvements in the mode of operating which have led the writer to this opinion, are the raising up of the bladder by distention of the rectum as advocated by Garson, and the laying aside of the knife in favour of the finger-nail and director after the linea alba has been divided. By these means the risks of injuring the peritoneum and of hæmorrhage are reduced to a minimum. After the bladder has been exposed, it is to be fixed with a hook and incised, and when this is done, urine does not seem prone to infiltrate the cellular tissue. Neither is septicæmia much to be feared, but should the surgeon wish to use antiseptic precautions he may do so more easily in this than in the lateral operation.

As regards operations for vesical tumours, not only is the high operation advocated for exceptionally large growths, but a larger "experience of the removal of calculus by the new procedure has increased my estimate of its probable value for the removal of tumours also." The advantages of the high operation are that it gives greater scope to the sense of touch, that it permits of a

limited amount of inspection of the cavity of the bladder, and that it allows of the application of the cauterly or styptics.

Sir Henry Thompson has operated upon eight cases by the improved supra-pubic method with one death. This was in an infirm patient of 70 years, who died of exhaustion, without any other apparent cause, on the 9th day after the removal of a calculus weighing 1½ oz. Five of the seven successful cases were operated upon for calculi weighing 1½ to 14 oz.; the other two were for the removal of papillomatous growths, one the largest which Sir Henry Thompson has removed. Full details of these cases are given at the end of the book.

The history of the supra-pubic method of operating is briefly sketched, with notes of the various methods employed, and at another place there is a detailed account of the steps of the operation as advocated by the writer himself. It is, perhaps, hardly necessary to advocate a careful perusal of this work by such an acknowledged master of his subject.

The Science and Practice of Surgery. By FREDERICK JAMES GANT, F.R.C.S. Third Edition. London: Baillière, Tindall, & Cox: 1886.

THIS being a third edition, requires that little need be said of it. The two bulky volumes contain a vast amount of material, and the student or practitioner who consults them may be sure of getting plenty of information on all subjects new and old. In Edinburgh attention is almost always given first, in looking over any work on surgery, to the manner in which Syme's amputation is described and commented on. We find Mr Gant's description no exception to the rule, that south of the Tweed the operation is not properly understood or appreciated, though his deviation from Mr Syme's own simple and plain description of the operation is not great. The other portions of Mr Gant's work which we have read seem to us to be accurate and well written. The numerous plates are many of them too diagrammatic, and many even inaccurate through roughness of outline. For example, there is the illustration of the position of the body in lateral lithotomy, and the attitude of the surgeon's hands and knife (vol. ii. p. 870).

Mr Gant seems to have placed before himself the task of saying something, at least, on every possible subject included in or connected with surgery. Of this imposed duty he seems to have discharged himself honourably, and the result is highly creditable for any single mind to have produced. Though some special portions have been written by friends, far the largest portion is from Mr Gant's own pen, and shows an amount of general information and voluminous research such as few writers are capable of.

Practical Human Anatomy: a Working Guide for Students of Medicine, and a Ready Reference for Surgeons and Physicians. By FANEUIL D. WEISSE, M.D., Professor of Practical and Surgical Anatomy, Medical Department of the University of the City of New York, etc. Illustrated by 222 Lettered Plates, containing 321 Figures. Pp. 408. New York: William Wood & Co., 56 and 58 Lafayette Place: 1886.

As a dissecting-room guide this work in no way improves upon the manuals already in use, while its bulk (somewhat greater than Gray's *Anatomy*) would be a serious drawback to its usefulness in any case. The plates, however, are remarkably good—in fact, could hardly be better. If published by themselves as an atlas of anatomy they could not fail to be appreciated, but they are thrown away in their present position. We cannot agree with the author in having omitted in his text all references to Medicine and Surgery. These, with some account of the action of muscles and of the movement of joints (both of which are also omitted), give an interest to the study of the dry details of anatomy with which a good teacher cannot afford to dispense. Except for the plates' sake, we can hardly expect much sale for the work in this country.

An Introduction to the Use of the Laryngoscope. By ARCHIBALD E. GARROD, M.A., M.B., M.R.C.P. London: Longmans, Green, & Co.: 1886.

THIS small work is presented as “a handy guide to practitioners who may wish to acquaint themselves with the use of the laryngoscope, and to the daily increasing number of students who attend in the throat departments of our hospitals.” As such, it appears likely to prove suitable and convenient, though somewhat elementary and meagre. Hospital students will find attendance on a few demonstrations by a teacher a more effective and preferable method of learning the practice of laryngoscopy, and with a good teacher we consider the possession by the student of such a work as that now before us quite unnecessary. On the other hand, practitioners unacquainted with the use of the laryngoscope, and who are distant from teaching centres, may derive light and leading in their initial laryngoscopic attempts from the study of this work.

History of the Royal College of Surgeons in Ireland, and of the Irish Schools of Medicine, including numerous Biographical Sketches; also a Medical Bibliography. By Sir CHARLES A. CAMERON, President of the Royal College of Surgeons in Ireland. Dublin: Fannin & Co.: 1886.

THIS is a beautifully got up and most interesting volume, which,

on the stem of a history of the Royal College, branches out into numerous and delightful side issues on Barber Surgeons, Surgical Education, Library, Museum, Private Schools of Medicine in Dublin. It is, indeed, a history of surgery in Ireland told in a pleasant, easy, flowing style, with anecdote, gossip, historical detail all welded into one, with a warmth of heart and real affection, not only for the persons living and dead, but for the old buildings, old customs, and old books. There is not a sneer nor an unkind word in it all; indeed, the biographical sketches would lead us to the belief that Adam's fall had produced no bad effects on the Irish side of St George's Channel. It may interest Edinburgh readers to notice that of the forty-one distinguished men who in 102 years obtained the diploma of Honorary Fellows three were from Edinburgh,—Benjamin Bell, George Ballingall, and James Syme.

Eminent Doctors: their Lives and their Works. By G. T. BETTANY, M.A. (Camb.), B.Sc. (Lond.), F.L.S. In two volumes. London: John Hogg: 1886.

"**EMINENT DOCTORS**" is a very readable collection of short biographies of the leading medical men of Britain, from the 16th century, when the College of Physicians was founded by Linacre, till the present time.

The style is bright and attractive, and the book is saved from any charge of monotony by the variety skilfully introduced in the way of anecdotes and quotations. Study and knowledge of the subject could not alone have produced such a result; beneath this there must be on the part of the author real interest in, and sympathy with the work performed, and the difficulties and opposition with which discoveries have invariably to contend. There are some clever touches given in several of the descriptions of character; as, for example, in that of the great James Gregory, where the obstinate, autocratic, but generous and warm-hearted Scotchman is brought before us as in a bold crayon sketch.

Among the wonderful amount of information gathered together in these two volumes, one is tempted to overlook a few inaccuracies which occur, such as the following:—"Alexander Lizars, afterwards Professor of Anatomy in the University of *Edinburgh*," vol. ii., page 49. "Thomas Keith, an *Aberdeen* surgeon," vol. ii., page 114.

It is interesting to notice in this history of the progress of medical science, how each new discovery or invention for the good of humanity has at first met with contempt and suspicion from those whom it is intended to benefit. In the case of Edward Jenner and vaccination, we see before us a retiring, unselfish, unambitious man, who persevered, in spite of all the difficulties

that bigoted men could throw in his way, in bringing to light his great discovery, which was afterwards to prove such a blessing to the world.

The author sometimes makes a very happy choice of anecdotes to illustrate character. For instance, in describing the indefatigable activity of Sir Henry Holland, he gives a quotation from Holland's own writings, telling of his incapacity for walking slowly; and thus brings clearly before our eyes the mode of life of the active, talented man of note, who found it impossible to walk round two sides of a square when he could take the diagonal!

In the preface the author gives several of his reasons for writing *Eminent Doctors*. His aim has been to suit his book to the busy practitioner, as well as to those who can spend more time in reading it. We believe that he has attained his object, and that before long *Eminent Doctors* will take the place it deserves among the "biographies" of the English language.

Bath, Contrexeville, and the Lime Sulphated Waters, with their Use in Medicine. By JOHN MACPHERSON, M.D., Inspector General of Hospitals (Retired). London: H. K. Lewis: 1886.

THIS is a useful little volume on the particular waters which are treated of. Its author brings an interesting array of opinions from ancient writers to bear on the subject and thus enliven it, and from personal knowledge he gives much useful information about many of the waters he mentions. We quite endorse his opinions that when we have a water at home possessing all the virtues of some foreign spring, it may be at least as well in many cases to send patients to the nearer resort, and we are amused to find that the chapter devoted to this subject has as its heading the words, "Are not Abana and Pharpar, rivers of Damascus, better than all the waters of Israel? Can I not wash in them and be clean?"

The Baths, Bathing, and Attractions of Aix-les-Bains, Savoy. By W. WAKEFIELD, M.D. London: Sampson Low & Co.: 1886.

IN his preface the author states that his aim has been to give the members of the medical profession and the public some general information under the various heads: "What the waters of Aix are good for; their administration; what kind of a place Aix is; how and where found; what the visitor should do when Aix is reached." In this aim he has been successful, and has produced a pleasantly written book, which members of the profession may consult with benefit to themselves and their patients.

Contra-Indications for Visiting the High Altitudes, with a Description of the Environs of Maloja, Upper Engadine. By A. TUCKER WISE, M.D., etc. London: J. & A. Churchill: 1886.

ALL the information of any importance which this work contains is taken from *Alpine Winter* by the same author. Why it has been published we do not quite understand. There does not appear to be any *raison d'être* for its issue in this form, but it serves to swell the list of works attached to the author's name.

Ichthyol und Resorcin, als repräsentanten der Gruppe reduzierender Heilmittel. Von Dr P. G. UNNA, Dermatologische Studien. Zweites Heft. Hamburg: Leopold Voss: 1886.

THE old proverb, that "guid gear is put up in sma' buik," was never better exemplified than in this little modest pamphlet, which contains the condensed result of years of labour, expressed clearly and forcibly. While the larger share of attention is devoted to ichthyol, or rather the sulpho-ichthyolate of ammonia, and its uses in eczema and rosacea, and incidentally in many other skin affections, resorcin, though a more recent and less tried remedy, is treated of at considerable length. Both belong to a group of agents which possess the property of abstracting oxygen, and thus exercise a peculiar action not merely on cornification, but also on the nutrition of the tissues in other directions, in particular, as vaso-constrictors. Sulphuretted hydrogen, pyrogallol, chrysarobin, and sugar, belong to the same class, and are casually noticed. As a study of remedies which apparently will bulk largely in the cutaneous therapeutics of the near future, apart from its suggestiveness on many allied topics, this treatise will be found well to repay perusal.

Recent Essays by Various Authors on Bacteria in Relation to Disease. Selected and Edited by W. WATSON CHEYNE, M.B., F.R.C.S., Assistant-Surgeon to King's College Hospital, etc. London: New Sydenham Society: 1886.

THE thanks of the profession are due to the Council of the Sydenham Society for the issue of this volume. It consists of a series of essays and papers, chiefly by German and French authors, on micro-parasites in various diseases. These have been translated by well-known writers, and edited by Mr Watson Cheyne, whose position as one of the first of living bacteriologists is a guarantee in itself of the value of the book. If there were no other papers

than those of Koch on methods of investigation, tuberculosis, cholera, and disinfection, the volume would be one to be prized. But there are in addition articles on typhoid, erysipelas, pneumonia, glanders, diphtheria, and actinomycosis by Gaffky, Fehleisen, Friedlander, Loeffler, and Israel, whose names as investigators of these diseases have extended far beyond their own country. There are also abstracts of recent papers on the bacilli of leprosy, on micro-organisms in relation to suppuration and septic diseases, and on attenuation of virus and protective vaccination, including Pasteur's researches on vaccination for rabies. This may help to give an indication of a work which ought to induce not a few non-subscribing members of the profession to become members of the Society.

How to Use the Galvanic Battery in Medicine and Surgery. By HERBERT TIBBITS, M.D., etc. Third Edition. London: J. & A. Churchill: 1886.

THIS work, which took its origin in a lecture delivered before the Hunterian Society, and had afterwards grafted upon it three lectures delivered at the National Hospital for the paralyzed and epileptic, has been revised and brought up to date. The author has wisely refrained from adding anything beyond what was necessary, and has kept the book a small one. It will be all the more welcome to students, who will find in it much useful information under the three divisions of Instruments, Methods of Applications, and Electro-Diagnosis and Treatment.

Management of Athletics in Public Schools. By GEORGE FLETCHER, M.D. Cantab. London: H. K. Lewis, 136 Gower Street, W.C.: 1886.

THIS paper was read before the "Medical Officers of Schools Association" in January of the present year, and is a proof of the valuable work which the Association may be expected to do. The writer has been himself an athlete, and can therefore speak with authority on his subject. He takes up the sound position that education, as distinguished from instruction, should be a leading out of all the faculties, physical and moral as well as mental, and carefully traces the value of athletics as a necessary part of an all-round training. On this ground he argues that they should be systematized and controlled, and not left in the hands of the boys alone. "Let us," he says, "try and eradicate from schools those two classes of boys,—the self-indulgent loungeur and the pale, narrow-chested, prematurely forced bookworm." He might have also

added the mere athlete. In reviewing the various form of athletics which are practised in schools, he throws out many hints valuable to all concerned in the care of young people. We would like to see the pamphlet widely read, and its principles as generally put into practice.

Military Drill as a Means of Physical Training for Boys. By CHARLES F. WITHINGTON, M.D. *Boston Medical and Surgical Journal*, May 13, 1886.

AN interesting comparison of the place occupied by athletic exercises in the public schools of Great Britain, and of Boston and other parts of America, may be made by carefully reading this paper and contrasting it with the one referred to above. We thus learn that military drill, and not a great amount of that, is the only recognised form of physical exercise in the larger schools of Boston and many other towns of the United States. Dr Withington's object in writing this paper is to oppose the confidence usually placed in military drill as a means of exercise, and to advocate other forms better calculated to attain the desired end. He shows that the war fever in 1863 is responsible for the presence of military drill in schools, and draws attention to the omission in more recent years of drill in the open air and of military gymnastics, which were part of the original plan.

He sums up his objections "to military drill as a sole means of physical culture for growing boys" as follows:—

1. The anatomical objection, based upon the fact of the obliquity of the superincumbent weight with reference to the spinal axis.
2. The physiological objection, based on the production of a tension of the muscles, rather than of that constant alternation of activity and repose which best conduces to their nutrition.
3. What may be called the philosophical objection, based on a lack of adaptation in design for the end to which the system has been converted.

The subject is calmly and fairly discussed, and an unbiassed reader cannot fail to see that Dr Withington is in the right.

Year-Book of the Scientific and Learned Societies of Great Britain and Ireland. Third Annual Issue. London: Griffin & Co.: 1886.

WE have already pointed out the great value of this book in noticing the two former issues. The present contains, in addition to the lists of papers read before the Societies in 1885, a note of the publications of the Scientific Departments connected with the State.

The Asclepiad: a Book of Original Research and Observation, etc.
By BENJAMIN WARD RICHARDSON, M.D., F.R.S. Published
Quarterly. London: Longmans, Green, & Co.: 1886.

THE number of this journal for the third quarter of 1886 is not below its own high standard in interest and originality. The chief paper is one on Alcoholic Asthenia of the Heart, in which the whole question of the use of alcohol as a pick-me-up is fairly discussed. The "Skeleton in the National cupboard" is the great and ever increasing contrast between deep poverty and abounding luxury.

Richard Wiseman is the subject of the biographical sketch. It is illustrated by a lovely reproduction in autotype of an oil painting of that most original and fascinating surgeon.

Saint Thomas's Hospital Reports. Vol. XIV. London: J. & A. Churchill: 1886.

THE volume for this year contains, in addition to the reports from the various departments of the Hospital, a continuation of Mr Le Gros Clark's Records of Surgical Experiences, and a number of articles which will repay a careful reading. The volume is quite equal to its predecessors. It is unfortunate that much valuable work that appears in these and other hospital reports is not more widely circulated, and so made better known to the profession.

The Australasian Medical Directory and Handbook, including a General Gazetteer and Road Guide and Local Medical Directory of Australasia, with an Appendix containing the Names of all known Unregistered Medical Practitioners throughout the Colonies, and also a complete List of American Medical Colleges, extinct and existing, not recognised. Edited and compiled by LUDWIG BRUCK. Second issue, 1886. Australasian Medical Gazette Office.

THIS is a most useful volume, bearing out the purpose and promise of its title. It is built on the same lines as the *Medical Directory of Greater Britain and Ireland*, though as yet it is not so large a volume.

A Code of Medical Ethics, with General and Special Rules for the Guidance of the Faculty and the Public in the Complex Relations of Professional Life. By JUKES DE STYRAP, M.R.Q.C.P., etc. Second Edition. London: J. & A. Churchill: 1886.

THE present issue of the *Code of Ethics* is enlarged by the addi-

tion of new matter dealing with some of the vexed ethical questions that have occupied the attention of the profession since the publication of the first edition. Consultations with homœopaths and unqualified assistants, bulletins, attendance on professional brethren and their families, medical evidence and calls, are among the most important of these. It is a volume in every way worthy of the high commendations which have been passed upon it, and one which every member of the profession ought to be possessed of. It is dedicated "in memoriam" to Sir Thomas Watson.

Catalogue of the Pathological Museum of the Western Infirmary, Glasgow. Compiled by JOSEPH COATS, M.D. Glasgow: Alex. MacDougall: 1886.

IN this volume we have a full description of 656 preparations, which, we presume, have been collected since the opening of the Infirmary, and, if we mistake not, chiefly due to the energy and ability of the compiler. The preparations are arranged in twelve series, with an extra one of casts of deformed feet and hands. The collection is apparently rich in specimens illustrative of diseases of the circulatory system, and especially of aneurisms; those of diseases of the generative organs perhaps coming next in importance, being so at least in number; but, at the same time, most departments of surgical and medical pathology are well represented. The preparations are put up and exhibited on the shelves so as to be available for study, and must form a very valuable adjunct to the teaching *matériel* in the Medical School of Glasgow.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LXV.—MEETING IX.

Wednesday, 6th May 1886.—Dr BATTY TUKE, *Vice-President, in the Chair.*

I. EXHIBITION OF PATIENT.

Mr Bryce showed for Dr Alex. Bruce a MAN suffering from CHRONIC POISONING BY BISULPHIDE OF CARBON.

II. EXHIBITION OF PATHOLOGICAL SPECIMENS.

1. *Dr W. Russell* showed—(1), A BRAIN presenting a lesion of con-

siderable extent in the left orbital lobe. The condition appeared to have been one of gummatous softening. Over the seat of softening the dura mater was adherent. The basilar artery presented an aneurismal swelling. The LIVER from the same case showed cicatrices also, doubtless of syphilitic origin. (2), LUNGS, KIDNEYS, AND TESTICLE from the body of a patient who had suffered from anasarca and dropsy, which was believed to be due to chronic Bright's disease. The kidney showed that condition. The special interest of the case consisted in the presence of a testicle in a pretty advanced state of strumous degeneration, and in the further fact that there was an eruption of miliary tubercle in the lungs, this eruption having evidently been the closing scene in the clinical history of the case. (3), HEART AND PORTION OF LUNG from the body of a dispensary patient. When first seen she had been ill for a week, and had a temperature of 102°. There was a loud, rough systolic murmur all over the chest. The difficulty in the case was the diagnosis—whether it was vegetative endocarditis, or typhoid fever, or pneumonia. The problem as to its being typhoid fever became more complicated from the occurrence on the following day of diarrhoea. She was so ill that it was impossible to examine the lungs satisfactorily, though Dr Russell was inclined to exclude both vegetative endocarditis and typhoid, and thought there was a patch of pneumonia, though he had not discovered its situation. He found post-mortem that the condition was due to an apical pneumonia at the back of the right lung. In addition there was an intense enteritis, but from what cause he could not satisfy himself. The heart was interesting from the loudness and roughness of the systolic murmur. There was no diastolic murmur, and the pulse had none of the characters of aortic regurgitation. It would be seen that the roughness of the systolic murmur must have been largely due to calcareous masses at the junction of the cusps with the endocardium. Two of the cusps were in part adherent, and would share in producing stenosis of the orifice. The patient had had an attack of acute rheumatism twenty-two years before her death, and they might presume that the cardiac lesion had its origin at that date, but during all these years no cardiac symptoms of consequence had manifested themselves. The mitral orifice was also stenosed, and the cusps thickened.

2. *Dr James Carmichael* exhibited the THORACIC AND ABDOMINAL ORGANS in a case of tuberculosis. The boy, aged 4 years, had been about three weeks in the Royal Hospital for Sick Children. The history showed that the child first began to complain three months previous to admission. He had not suffered from any of the acute ailments of childhood, and there was no hereditary predisposition to tubercular disease. The clinical features of the case showed rapid emaciation, with pulmonary consolidation, enlarged liver and spleen, and the mesenteric glands generally. On post-mortem

examination, the body exhibited a most perfect example of universal tubercular infarction of all the organs and tissues. The lymphatic glands were everywhere, except in the limbs, much enlarged, tubercular, and caseous, those in the thorax being conspicuous by their size, yet there had been no signs during life of pressure on any important part. He would specially direct attention to the spleen, which was infiltrated throughout with tubercular masses, and showed a very interesting mass of tubercular infarction occupying an area five-eighths of an inch in diameter.

3. *Mr A. G. Miller* showed for Dr Sturrock of Golspie A GUNSHOT WOUND OF THE STOMACH. Two boys were out frightening crows with an old gun. They were entrusted with caps only, but had managed to get some powder, with which they had loaded the gun, using paper as a wadding. In crossing a dyke the gun exploded, and the contents lodged in the side of one of them, a lad aged 16, making a wound 1 inch by three-quarters, through which a large quantity of bowel protruded. Chloroform was given, the wound enlarged, and the intestine carefully examined for an aperture. None being found it was returned, and the abdominal wound sutured. The lad survived eight hours, and on post-mortem examination it was found that the stomach had been wounded under the left lobe of the liver. In the wound, which was very large as compared with that in the abdominal wall, the newspaper wadding was found.

III. EXHIBITION OF DRUG-VEHICLE.

Dr Foulis showed some syphons of potash-water in which was dissolved salicylate of soda. The whole syphon could be divided into twenty doses by gumming on to the glass a piece of paper marked off into twenty divisions. Some syphons contained 200 grains, and others 400 grains, of salicylate of soda, so that 10 grains or 20 grains of the salicylate could be given at a dose by simply letting the liquid run off to one division of the gummed paper. The same thing could be done with other drugs, such as the benzoates. These medicines were best taken dissolved in this way, and, added to milk or limejuice, were both palatable and pleasant.

IV. ORIGINAL PAPERS.

1. *Dr A. T. Sloan* read his paper ON THE RELATION OF GOITRE TO MENSTRUATION AND PREGNANCY, AND THE INFLUENCE OF THE SYMPATHETIC NERVOUS SYSTEM ON ITS PRODUCTION, which appears at page 201 of this Journal.

Dr Tuke said he occasionally met with cases of goitre, especially in hysterical women. Two such cases he had under his care at present, goitre and hysteria both being present, but there was not the slightest menstrual irregularity, nor had such ever existed.

That there was something deeper in the causation of this disease than had yet been got at, was shown by the fact that in the valley of Aosta, and in certain other goitrous colonies, the males affected were in excess of the females.

Dr Ireland thought *Dr Sloan's* study of these cases was a good contribution to medicine, but was of opinion that he had introduced a number of questions in which the functions of the body in their relations to cause and effect were somewhat bewildered. The weak point in his theory consisted in the assertion that goitre commenced about the age of puberty. Where goitre was endemic a large number of children was affected, and occasionally children were born with a small goitre. He did not see clearly the connexion between the organs of generation and goitre. There was no doubt a certain connexion between different organs of the body; but he agreed with *Dr Tuke* that there was a deeper cause at work—it might be a miasm in the air or the water—and there was a degeneration over the whole body. He suspected that there were a good many kinds of bronchocele or goitre. Those sporadic cases that occurred in the towns appeared to him to be something different from what they had in the valley of Aosta. *Dr Sloan* had not made any reference to exophthalmic goitre. A great many observers held that this was due to some lesion in the sympathetic system. On considering the matter carefully, he thought the evidence stronger that it was connected with some change in the central nervous system. *Brown-Sequard* had produced exophthalmus by injuries to the restiform bodies. *Dr Yeo* had published a case in which there was a crossed exophthalmic goitre. He believed that goitre was more common in women than in men, even in those countries where it was very common; but there was no doubt that there was a vast number of men affected with goitre and cretinism, and affected before puberty. *Kocher's* experiments seemed to indicate that the thyroid might secrete something that was required for brain nourishment, and this might be the origin of the increase during pregnancy, two brains having to be nourished instead of one.

Mr Cathcart said he was at present engaged in reading an elaborate article by *Wölfler* of Vienna, who had investigated the enlarged thyroid glands removed by *Billroth*. The pathological conditions were found to be extremely varied. What were formerly called hypertrophies were now divided into various kinds of adenomata. It was interesting to notice that among the differently structured tumours there was found the feature to which *Dr Sloan* had drawn attention, namely, enlargement during pregnancy, not merely in the form of hypertrophy, but also of tumour growth.

Dr Peel Ritchie asked whether there might not be some connexion between the changes that occurred in the heart in the pregnant state and those that were described as occurring in the thyroid gland.

Dr Blair Cunynghame said the remarks of *Dr Cathcart* were borne out by therapeutics, because there were many goitres affected by iodine given externally or internally. On the other hand there were goitres, and those were probably adenomatous, in which iodine had no effect, showing a distinct anatomical difference.

Dr Tuke added that there were goitres which disappeared on the patients leaving their native places.

Dr Sloan said that in India and Switzerland men were commonly affected with goitre, but in other places women were most affected. He thought *Dr Ireland* had over-estimated the scope of his paper. He had carefully avoided referring to the endemic causes. It was quite possible that the heart changes were explicable in the same way as the thyroid enlargement, but he thought these were brought about in the same way through the sympathetic nervous system.

2. *Dr Byrom Bramwell* read his paper ON A CASE OF MENINGEAL CEREBRAL HÆMORRHAGE, which appeared at page 102 of this Journal.

Dr Tuke thought *Dr Bramwell* was to be congratulated on the success of his treatment, and on the admirable manner in which he had brought the case before the Society. He should like to ask if the lymphatics he referred to in connexion with the optic sheath were perivascular.

Dr Bramwell said that there were vessels with them, but he was not sure that they were perivascular.

Dr Argyll Robertson could corroborate the details *Dr Bramwell* had given as regards the eye symptoms. When he saw the patient he presented all the characters of one who had undergone a very severe attack of double optic neuritis. The character of his vision was such as was to be observed where atrophy had resulted from inflammation of the optic nerve. One very interesting point in connexion with this case was the circumstance that, as far as one could judge from the history and course of the disease, the optic neuritis had resulted from extravasation of blood. Unless this was extensive it was rare to have double neuritis resulting. It was sometimes the result of simple inflammatory affections, but was more generally due to the presence of tumours in the intracranial cavity. As regards the causation of optic neuritis, while he could conceive the explanation given by *Dr Bramwell* as feasible and commendable, he did not consider it an essential view to take, because, though in a certain proportion of cases they found the vaginal sheath distended by fluid, there was a large number of cases in which this distension did not exist. Hence the difficulty of coming to a conclusion that in the cases in which this did exist with the optic neuritis there was any connexion between them. But those who held the theory that there was this distension of

the vaginal sheath of the optic nerve, and that it produced the optic neuritis, some years ago introduced an operation with the view not merely of improving the condition of the optic nerve, but of the patient himself, by tapping the optic nerve sheath. He thought De Wecker did this, and stated that in some cases the eye and the general condition were both improved. But the difficulty arose that it was impossible to distinguish by ophthalmoscopic examination the cases in which this distension of the vaginal sheath existed from those in which it did not. With regard to the field of vision, he might mention that what Dr Bramwell had alluded to was peculiar, that in the one eye the patient had a much larger field of perception of green than usual. As a rule, the field for this colour was the smallest. That for red was the next smallest. Then came the field for yellow, and lastly that for blue. But in this particular instance the field for green very far overlapped that for yellow.

Dr W. Russell thought Dr Bramwell was to be congratulated on the diagnosis, and still more on the prognosis he had made in this most interesting case. Meningeal hæmorrhage was not uncommon in bleeders. Some years ago he had a patient who died of hæmophilia, in whom, it appeared to him, that death had occurred from a somewhat sudden hæmorrhage into the brain. He was unfortunate in not getting a post-mortem examination. In another case, one of purpura hæmorrhagica, in which he obtained a post-mortem examination, and in which death had taken place in a somewhat similar fashion, there was a meningeal hæmorrhage. He was interested in the symptoms which led Dr Bramwell to diagnose meningitis as well as hæmorrhage, because he had seen a case in Carlisle with a medical friend in which the difficulty was of diagnosis between meningitis and hæmorrhage. He thought the case was one of meningitis because there was pain in the head, a slight elevation of temperature—not nearly so much, however, as in Dr Bramwell's case—a degree of muscular rigidity, as if the cortical motor areas were irritated, also vomiting and partial unconsciousness, from which the patient could be aroused. She could move her limbs when asked to do so. There was paresis on one side of the face. It seemed to him that this was a case of meningitis, but when the patient died—coma having deepened suddenly and the paralysis become more marked—there was no meningitis, and the symptoms which had so closely simulated it were due to hæmorrhage into the meninges covering the cortical motor centres as well as other regions.

Dr Tuke asked if Dr Bramwell had no suspicion that the lesion extended higher up than the base, as some symptoms seemed to point to this, *e.g.*, transitory paralysis of the hand.

Dr Bramwell said the difficulty referred to by Dr Russell was a very real one—the difficulty of saying whether there was anything more than extravasation of blood. The distinct and long continued

elevation of temperature, 102° going up to 104° , seemed in this case to indicate meningitis in addition to the extravasation of blood at the base. With regard to the point Dr Tuke had mentioned, he (Dr Bramwell) had called it a basilar extravasation, not meaning to indicate that there was absolutely no lesion higher up. The fact that there were no twitchings or convulsions seemed to indicate that there was no great extension of the inflammation over the cortical centres; the paralysis, therefore, could hardly be due to inflammatory pressure on the cortical centres. In reply to Dr Argyll Robertson, Dr Bramwell said that he had not in any way intended to discuss the causation of double optic neuritis as a whole, but simply the way in which it had been produced in this particular case. The facts that there was an extravasation of blood at the base (a condition in which Dr Bramwell knew from actual observation that the blood could make its way into the sub-vaginal sheaths, and produce localized inflammatory changes of the optic nerves), the early appearance of the optic neuritis, its great intensity, and the very marked manner in which vision was affected quite at the early stage of the inflammatory process, were the reasons which led him to adopt that view. Possibly, on some future occasion, he might bring the whole subject of the mode of causation of double optic neuritis in cases of cerebral disease before the Society. That subject was one of great interest and difficulty, at which Dr Bramwell had been working for some years.

OBSTETRICAL SOCIETY OF EDINBURGH.

SESSION XLVII.—MEETING VII.

Wednesday, 9th June 1886.—Dr HALLIDAY CROOM, President, in the Chair.

I. *The President* showed TWO SETS OF OVARIES AND FALLOPIAN TUBES removed by him for diseases. In one case the whole pelvic structures were bound together by a dense mass of adhesions, and it was with much difficulty that the ovaries could be found. The right ovary was found to be so matted that it could not be separated, and after a time the tube, which was enormously thickened, came away leaving the ovary in the pelvis. Both patients have done well.

II. The report of the Council on Professor Simpson's paper on A COMMON OBSTETRIC NOMENCLATURE was presented, and after one or two verbal alterations were suggested and adopted, it was resolved to send a copy to all teachers of obstetrics in the United Kingdom, and at the same time to ask them to state whether they approved of the adoption of the system, or to indicate any alteration which they wished to suggest. Professor Simpson's paper appears at page 197 of this Journal.

III. *Dr Ballantyne* read a paper on SPHYGMOGRAPHIC TRACINGS DURING LABOUR.

The President congratulated *Dr Ballantyne* on the very excellent series of tracings which he had obtained, and thought it was a matter for great satisfaction that the younger members of the Society gave themselves so much to the scientific side of the subject.

Dr Hart felt greatly indebted to *Dr Ballantyne* for his very excellent paper. It represented an enormous amount of work, which could scarcely be appreciated by those who had not attempted a similar investigation. It was specially valuable as giving confirmatory evidence of clinical observations. It came out that a slow pulse seemed to be a good pulse in relation to pregnancy as well as to the puerperium. He wished to call attention to a fact of some interest in this connexion. *Dr Lauder Brunton* mentions that the pulse can be slowed by sipping water. *Dr Hart* recently had a patient whose pulse remained very rapid after confinement. He asked the patient to sip a quantity of water, and he was surprised and delighted to find that the pulse fell from 120 to 70 after she had taken a few sips. He thought this was an important fact to know, as it might prove of much value in practice.

Professor Simpson was glad to agree with what had been said as to the value of *Dr Ballantyne's* paper. He had taken much interest in the observations while they were being made by *Dr Ballantyne*, and he was now glad to see they had borne such excellent results. *Dr Ballantyne* had been wisely cautious in making deductions from the experiments, but he thought the observations were of the highest value, and offered an extensive subject of study. He thought the Society had reason to congratulate itself on having so much good work placed before it, and he considered this a valuable addition to the Transactions.

Dr Barbour asked whether *Dr Ballantyne* had found if the same alterations of the pulse character succeeded abortion as occurred after labour, because if so, it would seem that they were due more to a nervous than a merely physical cause.

Dr P. A. Young asked if any one had noticed the remarkable slowing of the pulse which occurred sometimes after measles—a condition which he had observed more than once.

Dr Ballantyne thanked the Society for its reception of his paper. In reply to *Dr Barbour*, he said that the same changes occurred after abortion as after labour, but in very different degree.

IV. *The President* read a paper on FIBROUS POLYPI COMPLICATING THE PUERPERIUM, which will appear in a future number of this Journal.

Dr Underhill felt greatly obliged to *Dr Croom* for this paper. He had had one similar case, which had a very unfortunate ending. A lady came to him suffering from menorrhagia. She began to take ergot, and no period occurred after that, as she became pregnant. She was delivered in due course, and the labour itself was quite normal. The uterus contracted fairly well, but, notwithstanding this, a persistent oozing from the uterus continued, in spite of all efforts to stop it. He then discovered that there was a large fibrous polypus with a thick pedicle hanging down through the os, and causing the hæmorrhage. *Dr Keith* was sent for, and removed it. The patient was greatly exhausted, however, and succumbed on the second day. There were no evidences of septicæmia. He recalled another case in which a patient had a large tuberos fibroid which was recognised during her first pregnancy. The labour was in no way abnormal. She became pregnant subsequently, and it was found that the tumour had entirely disappeared during her previous puerperium.

Professor Simpson could confirm *Dr Underhill's* experience of the withering of fibroids during the puerperium. He found that in these cases no subsequent trouble arose from them. As regards *Dr Croom's* cases, he was of opinion that their removal should always be attempted so soon as they are recognised post-partum.

Dr Hart wished to point out that he thought the solution of corrosive sublimate employed was too strong; 1 to 2000, or even 1 to 4000, was quite sufficient, and there was some risk of unsatisfactory results following the use of the strength employed by *Dr Croom*.

SESSION XLVII.—MEETING VIII.

Wednesday, 21st July 1886.—*Dr HALLIDAY CROOM, President, in the Chair.*

I. *Dr Underhill* showed—(1.) A SPECIMEN OF EXTRAUTERINE GESTATION, sent by *Dr Morrison* of Hartlepool. The following is an account of the case:—Patient, æt. 37. First and only child born eighteen years ago. On 14th August 1885 she menstruated for the last time. Two months later (12th October), whilst sweeping the yard, she was seized with such severe pain in bowels, accompanied by faintness, that she had to be carried into house and put to bed. A medical man was sent for, and in the beginning of November, three weeks after her seizure, I first saw her. Pelvic examination and the history made it clear that she was suffering from a hæmatocele of considerable size. The history of missed menstruation was of doubtful value, as irregularities had always been of frequent occurrence. She remained in bed, and by the middle of December the effused blood had been absorbed, leaving a rounded tumour, which occupied the pelvic brim on the left side. The enlarged uterus could be felt pushed by the tumour to

the right of the middle line. Morning sickness, enlarged mammae, and well-marked areolae with colostrum in breasts, left little doubt as to the nature of the case. On 25th January the foetal heart was heard for the first time. The placental souffle was loudest in the middle line and to the right of it. On 2nd February the foetal heart was heard for the last time. From the middle of December till now she was able to be up, about, and working gently, though with frequent pains, especially at night. From this time she was confined to bed with pain, lost flesh, and only rested with morphia. The temperature now rose at nights, 100° being the usual record. Sickness was frequent and appetite lost. Her consent to operation was now obtained, and on 9th February an incision was made, about 6 inches long, to left of left rectus abdominus. The peritoneum was opened, and the tumour exposed. Sponges were packed carefully round the tumour, and an aspirator needle pushed into it. Nothing but blood escaped. The tumour was now incised, and a gush of blood followed from division of placenta. My hand pushed into sac drew foetus out by head. A large quantity of blood was lost before the sac could be plugged with sponges. When this was done the walls of the sac were stitched to abdominal wound. A tubular structure, found post-mortem to be sigmoid flexure, was with difficulty avoided by suture needle. The cord was cut short and left in sac with placenta, only disturbed by necessary operation. The sponges were removed from interior of sac in four hours. There was no recurrence of hæmorrhage. Nine hours after operation she died, apparently never having recovered from loss of blood. The post-mortem specimen consists of uterus, sac, and portion of abdominal wall, with operation sutures *in situ*. The uterus has been slit up, and a string passed through Fallopian tubes, showing a rupture close to uterus. At the uterine side the connexion of the sac to the wound is imperfect, but this was exaggerated by tearing at the post-mortem examination. The peritoneal cavity was found to be absolutely clean, not a single drop of blood having escaped into it. Sigmoid flexure also slit up, showing sutures very close. (2.) A SPECIMEN OF RUPTURE OF THE UTERUS, also sent by Dr Morrison, with the following history:—This specimen was obtained from a young woman, a primipara, who was attended by a midwife. A medical man being called in found an arm presenting, and on introducing his hand through the fully dilated os, discovered a large rupture through the back of the uterus, which allowed his hand to pass in among the intestines. As there was some hæmorrhage going on, he at once turned and delivered without difficulty. A hand was now passed into the vagina for the purpose of removing the placenta; nothing could be felt but the intestines, which had come through the rent, the placenta having escaped into the abdominal cavity. The intestines were at once returned. The foetus had been dead some time, was peeling, and had a most

offensive odour. Dr Morrison was now sent for. He found the patient pale, but warm, and having a fair pulse. She was at once removed to hospital, where Dr Morrison opened the abdomen and removed the placenta. The abdominal cavity contained about a quart of clotted blood, of most offensive odour, which was partly scooped out, partly washed out with hot boracic lotion, and partly sponged out. When the abdominal cavity had been thoroughly cleaned, a large sponge fixed to forceps passed *per vaginam* was left in the uterus to prevent bleeding, which still continued. A full-sized drainage tube was passed from the abdominal opening through the rent in the uterus past the sponge, and was left hanging out of the vagina. The abdominal wound was sutured round the tube, and the patient put to bed, but she only lived a short time. *Post-mortem*.—The interior of the uterus at the placental side was covered with a purulent layer.

II. *Dr Brewis* exhibited the OVARIES AND FALLOPIAN TUBES which he had removed from a patient nearly a month ago. On looking at the specimens the ovaries were seen to be slightly enlarged, and their contour made irregular by the projection of numerous cysts on the surface. On making a section through one of the ovaries its cystic character was more thoroughly demonstrated, as then it was seen that the bulk of the ovary was made up of cysts, some of which were a $\frac{1}{4}$ of an inch in diameter. The amount of stroma was seen to be diminished. The disease was cystic degeneration, the cysts being developed at the expense of the Graffian follicles and stroma. From microscopic sections made by Dr Brewis of ovaries similarly affected, it appears to him that those cysts originate in changes which take place in the stroma around the Graffian follicles. The initial change seems to be a thinning of the stroma immediately around the Graffian follicles. This thinning causes the follicle to become separated from the stroma, the follicle falls in, and with its epithelial lining becomes broken up, and either entirely disappears or forms the cheesy *debris* sometimes found in those cysts. In this way the cyst cavity is produced. The cyst wall is apparently composed of two or three layers of connective tissue cells closely packed together and lying end to end—the long axis of the cells of one layer being parallel to the long axis of the cells of the adjoining layer. The cyst wall is not lined with epithelium. The smaller cyst originates from one Graffian follicle, the larger ones are due to the coalescence of several Graffian follicles brought together by the disappearance of the intervening stroma. The tubes and ovaries were not adherent; there were no adhesions; the pain complained of, and which was present during nine years, originated in the ovaries themselves, and was not brought about by peritonitis. The patient is now free from pain, and says she feels quite well.

III. *Dr James Ritchie* showed a PLACENTA exhibiting an abnormality in the reflection of the membranes. For one-third of its circumference the membranes, instead of being continued to the margin of the placenta, were reflected at about an inch from its border. That this was not a recent condition was evidenced by the fatty degeneration which had taken place in an exceptionally great degree at the border of reflection from the placental structure. In consequence of this change the placenta was, in the process of expulsion, cut off from the membranes being delivered first, and the membranes separately from it afterwards. Part of the border of placenta not covered by membranes had blood clot, not quite recent, adherent to it. The specimen was from a primipara; the labour lasted seventeen hours, terminated with forceps; five grains of ergotin injected subcutaneously so soon as the head was born. Shortly after the birth of the child, although the uterus contracted fairly well, and the patient's general condition was good, flooding commenced, pressure over the uterus with the hand was of no avail, but hot vaginal douche caused expulsion of the placenta and membranes, after which there was no further hæmorrhage. Dr Ritchie had never seen this kind of abnormality; probably it explained the flooding.

IV. *Mr Skene Keith* showed—(1.) A CYST OF THE BROAD LIGAMENT AND ENLARGED CYSTIC OVARY. The patient, a girl of 20, had suffered for about a year from pain, before and during menstruation, in the left side. The tumour had been noticed for six months. It felt very hard, and was supposed to be an ovarian tumour. The diseased condition of the ovary accounted for the pain connected with menstruation. The right ovary was healthy. (2.) OVARIES AND TUBES removed from a patient, aged 34, on account of hæmorrhage. There was no fibroid, but general treatment, followed by curetting, had failed to stop the bleeding. No ligatures were left in the abdomen, the cautery being used. There were slight pelvic adhesions. (3.) A SMALL MULTICULAR OVARIAN TUMOUR, of very dense, firm structure. The right ovary had been transformed into a tumour weighing 17 lb., and was as tough and firm as the one shown. The specimen was situated below the other tumour, and was entirely enclosed in the omentum except where it was attached to the bladder.

V. *The President* showed what appeared to be a TUBAL PREGNANCY. The patient had been under observation for some time, having been sent in by Dr Barbour under the impression that it was an extrauterine pregnancy. The tumour grew more and more out of the pelvis, and at about the third month of amenorrhœa the operation was performed. The sac ruptured during removal, and a large quantity of blood clot escaped. The structure was being examined by Dr Barbour, who had not yet had time to report.

VI. *Dr R. W. Felkin* read a CONTRIBUTION TO THE DETERMINATION OF SEX, DERIVED FROM OBSERVATIONS ON AN AFRICAN TRIBE, which appears at page 233 of this Journal.

The President thought that *Dr Felkin* had brought out a fact of great interest and importance in relation to the disproportion of the sexes in the observations recorded, and thought it worthy of further attention.

Professor Simpson thought it of immense importance that observations of this sort should be accurately recorded, as it was only by an accumulation of such facts that any useful deductions could be obtained. *Dr Felkin's* interesting statistics seemed to favour the idea propounded by *Starkweather*, that the sex of an infant was due to what he calls superiority of one of the parents—the sex of the child being the opposite of that of the “superior” parent.

Dr Connel questioned the physiological superiority of the male individuals under the conditions named by *Dr Felkin*. He did not think that the over-indulgence in wine, etc., was calculated to promote the superiority of the male. He mentioned a case of a diabetic under his care, whose wife bore him five sons. He went to *Neuenahr*, became greatly benefited in health, and after his return his wife bore a daughter.

VII. *Mr Skene Keith* read a CASE OF SUPPURATION OF THE PAROTIDS AFTER OVIOTOMY, which will appear in a future number of this Journal.

The President had never seen the occurrence described by *Mr Keith*, but remembered that on one occasion, in which he removed a breast, parotitis occurred, and proceeded to suppuration.

Professor Simpson regarded the complication as of such rarity that one may regard it as a coincidence.

Dr Brewis had seen two cases of parotitis after ovariectomy in *Dr Macdonald's* practice. The first occurred on the seventh day, the temperature being 103° F. The left parotid gland was affected, and pain was also present in the site from which the left ovary had been removed. In the second case the right parotid gland was inflamed, the right ovary having been removed. The temperature also was high, and the parotitis lasted a fortnight. In neither case did suppuration occur. It was interesting to note that the parotid gland affected in both cases was on the same side of the body as the diseased ovary. *Dr Macdonald* used to point out the frequent coincidence of mumps and orchitis in boys.

Dr Felkin had seen one or two cases of parotitis and orchitis, and parotitis and ovaritis in natives suffering from malaria.

VIII. *Dr Underhill* presented the MATERNITY HOSPITAL REPORT for Quarter ending 30th April 1886, which will appear in a future number of this Journal.

Part Fourth.

PERISCOPE.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By WILLIAM CRAIG, M.D., F.R.S.E., Lecturer on Materia Medica, Edinburgh School of Medicine, etc., etc.

MENTHOL IN URTICARIA AND PRURITUS.—Among the myriad of remedies for these troublesome affections, we have no other which affords such complete and instantaneous relief as a solution of menthol. Not only is the itching relieved for a time, but a cure seems to be effected. In pruritus and in eczema, moistening the parts with menthol solution causes an immediate cessation of the pain. The solution should contain from two to ten grains of menthol to the ounce of water (*American Journal of Pharmacy*).—*Therapeutic Gazette*, July 1886.

PARTHENINE.—Dr Espernon publishes the notes of two cases of neuralgia treated by parthenine, an alkaloid recently extracted from a plant which is known in Cuba as *Giesta amara* (*Les Nouveaux Remèdes*). The first was that of a woman aged 33 years, who, as a consequence of an abortion, suffered from very severe pains in the iliac fossa during the menstrual period. Morphine, chloral, bromide of potassium, were all inefficacious, but quinine somewhat relieved the suffering. In a subsequent attack, characterized by pain, chills, and fever, the author diagnosticated ovarian neuralgia. He made a subcutaneous injection of morphine, and gave one grain of parthenine every two hours. The effect of the morphine was evident an hour after its administration, but the pain, nevertheless, continued. As a consequence of three doses of parthenine the pain disappeared and did not return. The same effect was obtained in another case. The author claims that this substance is especially indicated in neuralgia of malarial origin.—*Therapeutic Gazette*, July 1886.

SALOL.—"Salol" is the name of a new compound prepared by Professor Neucky, which is said to possess powerful antipyretic and antiseptic properties, and to be capable of replacing advantageously sodium salicylate in cases where that salt is badly tolerated. Salol is a derivative of salicylic acid, in which one atom of hydrogen is replaced by the phenol group. It is described as a white powder, having a faintly aromatic odour, and as it is almost insoluble in water, perfectly tasteless. Professor Neucky states that in the organism salol undergoes a simple splitting up into its two components without any further modification, both being found in the urine. The decomposition appears to be affected by the pancreas, since the powder brought into contact with comminuted pancreas is at once decomposed. Assuming, therefore, that the decomposition

first takes place in the duodenum and not in the stomach, Professor Nencky thus explains how it is that its administration is not followed by disagreeable after-effects. The dose is about the same as that of salicylate of sodium, but as much as four grammes (sixty grains) may be given daily. The urine after its administration becomes very dark, almost black, as after the ingestion of carbolic acid, of which salol contains 38 per cent. No toxic symptoms, however, are produced, probably because the phenol passes through the stomach in combination, and is not absorbed. The antiseptic properties of salol are also said to render it useful in the treatment of putrid affections of the mucous membrane (*Pharm. Journ. and Trans.*, 29th May 1886).—*Therapeutic Gazette*, 15th July 1886.

PERISCOPE OF MEDICINE, CLINICAL AND PATHOLOGICAL.

By G. A. GIBSON, M.D., and WILLIAM RUSSELL, M.D.

THE PATHOGENESIS OF ESSENTIAL ANÆMIA.—Silbermann concludes, from extensive experimental and clinical observations, that progressive pernicious anæmia results from an increased destruction of the red and white blood corpuscles and a deficient blood regeneration, and that in its nature it is a hæmoglobinæmia. The blood in those labouring under this disease contains too much of the fibrin ferment, and is therefore dangerous for the organism. The frequent hæmorrhages in this affection, from skin and mucous membranes, are caused by capillary embolism or capillary stasis. The anæmic form is of humoral origin, and is due to the large quantity of fibrin ferment. The relapsing character of this form is caused by the varying phases of the destruction of the blood. The high degrees of fattening observed are not due only to the lessening of the oxygen carrying hæmoglobin, but to an abnormal blood distribution, consisting in venous hyperæmia and arterial anæmia due to the action of blood ferment. In animals, by the gradual administration of blood decomposing agents, it is possible to produce a malady strikingly like pernicious anæmia. Silbermann states, finally, that a certain form of chlorosis and primary (simple) anæmia is in its nature also a hæmoglobinæmia like pernicious anæmia, but in a less degree.—*Berliner klinische Wochenschrift*, 26th July 1886.

STENOSIS OF THE DESCENDING AORTA.—Barié has collected statistics of all the cases of contraction of the descending aorta which have been placed on record. Added to his own observations, these make a total of 92 cases, in 87 of which the facts were verified after death by post-mortem examination. He points out that the localization of the disease is invariably in a position intermediate between the ascending and descending aorta, which

corresponds to the aortic isthmus of foetal life, and that the constriction is usually single, but at times double, while it may be gradual or abrupt. When very much developed, the contracted portion resembles a funnel with the narrow end downwards. The constriction is formed by a simple fibrous thickening of the walls, by thickened folds of the internal tissue, with swellings projecting into the lumen of the vessel; under other circumstances by a transverse septum perforated by a central or marginal opening, or the narrowing may be by two segments of the artery terminating each in an infundibulum, and joined by a fibrous cord, like two cæca in juxtaposition united by a single patent vermiform appendix. The dimensions of the constriction vary greatly. The proximal part of the aorta is generally much dilated, and has several times led to aneurism and rupture; on the distal side of the constriction it is also sometimes dilated, but this is not constant. Usually the large vessels springing from the transverse aorta participate in the dilatation of the proximal part. The *ductus arteriosus* is almost always obliterated. In eight cases it was patent as in foetal life, and in one case it was aneurismal. Certain lesions of the heart and great vessels result as a consequence of the stenosis, such as dilatation and hypertrophy of the heart, congestion of the head and upper limbs, with diminution of the blood supply to the body and lower limbs, which latter is obviated by the increase of the anastomoses between the upper and lower parts of the body. In about 38 per cent. of the cases observed, congenital or developmental anomalies were recorded, and the majority of the cases were of the male sex. There is nothing pathognomonic in the physical signs—evidence of dilatation and hypertrophy of the left side of the heart, with murmurs propagated along the aorta, and distension of the superficial vessels of the thorax, being most common. The pulsation of the arteries is increased in the neck and upper extremities, and diminished or absent in the lower limbs, where it is always retarded. The course of the disease depends on the state of the cardiac muscle; the progressive is not grave, and the average age at death in the cases observed is 34. The diagnosis is difficult, and depends on the presence of the dilated vessels aforesaid, and on the difference between the upper and lower circulation; it must be distinguished from *mediastinal tumours, aneurisms, and all causes of intrathoracic pressure*. All the theories of the origin of the disease involve, on final analysis, an arrest of development of the aortic isthmus, and this appears to be an effect of premature obliteration of the ductus arteriosus, which causes traction and consequent contraction of the aorta.—*Revue de Médecine*, May and June 1886.

OCCASIONAL PERISCOPE OF DERMATOLOGY.

By W. ALLAN JAMIESON, M.D., F.R.C.P., Extra Physician for Diseases of the Skin, Edinburgh Royal Infirmary; Lecturer on Diseases of the Skin, Edinburgh School of Medicine.

PYROGALLIC ACID IN DERMATOLOGY.—Allan's experience of this remedy in lupus, though limited, has been very favourable. In cases where the disease has returned in the cicatrix of a patch previously scraped, burned, or treated in some other way, this method has appeared of especial value. The acid seeks out the individual nodules, and determines a destructive inflammation in and about them, leaving the healthy tissues unchanged. He prefers the powder dusted on, or an ointment five to ten per cent. made with vaseline, or a combination of the acid with gelatin, collodion, or gutta-percha, all which are cleanly and easily applied. Still the total destruction of the new growth by pyrogallie acid alone is rarely possible, fresh nodules are apt to crop up again in the cicatrix. He recommends the application of mercurial plaster to the scar for a time. No one, he thinks, has pointed out the dangers to which the healthy skin is sometimes subjected by pyrogallie acid, further than to mention that a dermatitis or erythema may be sometimes set up. He cites a case of psoriasis where a ten per cent. ointment in course of two weeks blackened and charred the tissues round the patch to which it was applied, and caused an ulcer which healed slowly. In another case of psoriasis the same ointment caused similar blackening and charring, vesicating the skin round like a burn. This sloughed, and when healed left a disfiguring puckered cicatrix. At times much pain is complained of after using pyrogallie acid, and the tissues become inflamed. In this case its application should be discontinued for a time and a bland ointment substituted. The intensity of the effect produced appears to be in a measure proportionate to the thickness of the layer of fixed dressing painted upon the parts.—*Journal of Cutaneous and Venereal Diseases*, January 1886.

PRURIGO IN LYMPHATIC ANÆMIA, OR HODGKIN'S DISEASE.—Wagner records the history of three cases in which this symptom, not previously recorded, was present. The prurigo in most particulars resembled the disease recognised under that name. The papules occurred on the extensor aspect, but were also tolerably numerous on the flexor. They itched excessively, were of a dusky or dark red, and in addition there were numerous small scars. Between the papules the skin was scaly, the hairs scanty; it was dry and thick when pinched up. The related lymphatic glands were swollen in various degrees. A question arises, was the skin eruption the cause of the swelling of the lymphatic glands, at least of the peripheral ones? The etiology of lymphatic anæmia is so obscure that it is impossible to answer this. Trousseau believed in a connexion between

the glandular disease and irritation of the skin and mucous membranes. In Wagner's cases not all the glands were affected, to which vessels from the prurigo invaded areas proceeded. The prurigo did not in these cases begin in childhood. All ended fatally.—*Deutsches Archiv für Klinische Medicin*, Jany. 1886.

TREATMENT OF EPITHELIOMA BY RESORCIN.—Tommasoli relates the following case. A man, aged 60, had eczema on various parts of his body, and among others a small patch on the sternum, which was so much irritated, partly by the friction of the clothes, partly by scratching, that a typical epithelial ulcer developed under the crust of the eczema. The application of resorcin, 75 per cent., as recommended by Pascale, sufficed to cure the ulcer in the course of a few days.—*Monatshefte für praktische Dermatologie*, No. 2, 1886.

TUBERCULOSIS VERRUCOSA CUTIS.—Under this name Riehl and Paltauf designate a disease of which a number of cases were seen in Kaposi's wards in Vienna, and which they claim to be so far undescribed. It attacks persons of both sexes, but men in particular, is found on the backs of one or both hands, sometimes on the extensor aspects of the fingers or between them, seldom on the palm or adjacent parts of the forearm. It may be taken at first for lupus verrucosus, or for an inflamed group of warts. It occurs in patches, varying in size from a lentil to a crown piece. In shape either round, oval, or serpiginous when several unite at their edges. These enlarge at their margins by the appearance of new primary lesions, so that in old-standing patches the earliest manifestations are seen at the edges, while the central portions are at their height or are undergoing resolution. An enlarging patch is surrounded by a bright red erythematous band, a few millimetres wide, which fades entirely under pressure. It is smooth and glossy, showing the glandular openings distinctly. Inside this band there is often a brownish or livid zone, composed of disseminated small pustules, or the remnant of such. Nearer the centre the surface becomes more raised and irregularly uneven, which increases centrally into warty growths with club-shaped or more acuminate ends—papillomata. The surface of the central portion is generally covered with crusts. From fissures or pustules between the papillomata pus escapes when pressure is applied. Retrogression is shown by the papillomata becoming flattened towards the middle of the patch, a diminution of the crusting, and the disappearance of the small abscesses. In older patches the centre is even, slightly scaly, or cicatrized. The patches are never firmly attached to the tissues beneath, but, on the contrary, are easily moved over them. The cicatrices are seated in the upper layers of the cutis, are thin and pliant, and present a fine reticulated appearance. The only subjective symptom is a feeling of pressure during the developmental stage of the disease, which on

contact rises to a sensation of pain. Those affected were all more or less occupied in tending animals or handling meat. The disease is chronic. The diagnosis is made upon the course of the disease as a whole, rather than upon any characteristic symptom. It differs from lupus in not having brownish-red soft nodules, and being accompanied in its evolution by inflammatory symptoms, in showing no tendency to ulceration nor to recur in its cicatrices. While lupus hardly ever commences after puberty, this form of tuberculosis has been met with exclusively in adults. From the simple inflammatory papillomata described by Roser and Weil, it differs in not being so inflammatory, and from developing so slowly. From the vegetating syphilide it is diagnosed by the absence of the hard brown-red infiltration of its edge, and by its history. Histologically, the disease presents in its infiltration the peculiarities of giant cell tubercular infiltration. Tubercle bacilli were also found in the giant cells and elsewhere. The disease seems related to that described recently by Leloir as "suppurative perifolliculitis in patches." This is an acute disease reaching the highest point in development in about a week, and ceasing in three. On the hands, but also on other parts, circular or oval sharply-defined patches of a wine red or bluish hue are produced. Individual patches project 2-5 millimetres above the surface, and are permeated by a large number of sieve-like openings which lead into small abscesses. All the examples recorded by Leloir occurred in persons occupied with cows or horses. But much more closely allied to this disease is the well-known verruca necrogenica, which affects those in the habit of making post-mortem examinations. These wart-like growths occur most frequently and severely on parts which come in contact with the cadaveric tissues, and are usually without any noticeable lesion of the skin, or from very insignificant scratches or fissures. A small, red, smooth nodule is first seen, on which a small superficial pustule forms. A crust is produced, which, if removed, is soon renewed. In course of three or four weeks a wart-like papilloma develops, which extends peripherally. Sections of one of those removed from Dr Kolisko showed the same microscopic structure as tuberculosis verrucosa cutis. Riehl and Paltauf think that this latter was caused by direct inoculation with the poison of tuberculosis, yet all those affected were strong healthy persons, who exhibited no signs of constitutional infection. Treatment consisted in excision or curetting, the latter followed by application of caustic potass, nitrate of silver, or iodoform.—*Vierteljahresschrift für Dermatologie und Syphilis*, 1886, 1st Heft.

TREATMENT OF LICHEN RUBER.—Touton relates the history of two cases of lichen ruber which yielded rapidly to a combined internal and external treatment. The internal treatment consisted in the administration of arsenious acid in pill, as recommended by Hebra and Kaposi. The external, the inunction twice daily on

the trunk, neck, and extremities of an ointment composed as follows:—

R. Hydrarg. perchlorid.	1·0
Acid carbolic,	20·0
Ung. zinc,	500·0

Woollen underclothing was worn, and a chlorate of potash wash for the mouth was prescribed. The itching speedily ceased as an effect of the ointment, which caused no irritation nor any constitutional symptoms. It corresponds to one suggested by Unna.—*Berliner Klinische Wochenschrift*, No. 23, 1886.

TREATMENT OF ACNE.—Dr Hutchinson of Chicago believes that in ninety per cent. of cases of acne the exciting cause lies in the genito-urinary organs, the disturbance being probably of a hyperæmic nature. In young men, acting on the recommendation of Sherwell of Brooklyn, he employs the cold steel sound almost exclusively. This he passes once in three days. In one to two weeks the improvement is manifest, and in one to two months the skin is free from acne, merely scars remaining. Of nineteen cases fifteen were thus cured, the remaining four did not continue the treatment long enough to demonstrate its success or failure. In females he substitutes the hot-water vaginal douche. All our recent works in gynæcology praise most highly the hot-water treatment in all forms of inflammation of the uterus and its appendages. In the case of young women the method of treatment and its rationale can be explained to the mothers. In six out of seven cases the acne was cured, the remaining one failing to persevere. The douche is at first used every night, then as improvement takes place at longer intervals, being continued indefinitely once a week.—*New York Medical Record*, May 29, 1886.

PERISCOPE OF SYPHILOLOGY.

By FRANCIS CADELL, F.R.C.S. Ed.

SOME MOOT POINTS IN THE NATURAL HISTORY OF SYPHILIS.—Abstract of the Lettsomian Lectures, by Mr Jonathan Hutchinson, continued from p. 187.

Questions concerning the Inheritance of Syphilis.—Almost every one, he believes, now accepts the doctrine that a tainted father may beget tainted offspring, but some of our best authorities hold that, if a pregnant woman contracts syphilis, it is quite impossible that her disease can hurt the child in her womb. The converse proposition, of the possible ill influence of a tainted fœtus upon the mother, is still a matter of dispute. In any given case, where the father has transmitted syphilis quite independently of the mother, it is next to impossible to prove that the mother has never suffered. When, however, we find the history is repeated not once or twice, but hundreds of times, that a man known to have had syphilis marries a woman apparently healthy, and believed to have been

chaste, and that, without any obvious illness in the mother, a syphilitic child is produced, we become obliged to believe that inheritance from the father is not only possible but common. If it be suggested that in these cases the mother always first receives the disease, we reply that, although it is quite possible that now and then this might occur without the primary and secondary symptoms being recognised, it is simply inconceivable that it should happen often. Exactly the same kind of proof of probability is offered us in respect to the influence of an infected foetus upon a previously healthy mother. It will be seen that we want proof of two things: *first*, that a woman may carry a syphilitic child without herself suffering in any obvious manner; and, *secondly*, that although she shows no symptoms, yet she does in reality receive a taint. Of the first the proof is abundant; of the second it is possibly less convincing. It consists in the fact that women not unfrequently present tertiary symptoms who have never had primary or secondary ones; and next, that they are not susceptible of contamination by their infants. He believes, with confidence, in Colles' law, and holds that it will, with every additional year of experience, become less and less a moot question. He next asks whether it is possible for a mother who contracts syphilis during pregnancy to infect her foetus. He has met with several cases, which appeared to be very conclusive, as proof of its occurrence. He believes the inheritance is just as certain, and just as uncertain, whether the influence is derived from the father or the mother. Nor does he believe that the fact of both parents having suffered makes any difference in the severity of the disease in the child.

On Cases of Transmission to many Children in Succession.—1. Is there any reason to believe that, when syphilis shows itself in several children of the same family, its degree of severity is less in the younger than in the older ones? 2. Is it usual for some children to escape entirely, when older and younger ones suffer severely? 3. When children in the same family show very widely different degrees of severity in symptoms during infancy, can anything be predicated from that fact as to their proneness to suffer later on in life? Mr Hutchinson believes that there is no reason for thinking that the transmission of syphilis is ever a thing of less or more, but rather, that if a child inherits any taint, it inherits the whole malady; and that something in the pre-existing state of the different children disposed one to suffer much, and another but little. He mentions the cases of a brother and sister who both suffered from interstitial keratitis. The sister suffered most severely, although she was six years the younger. Thus, there is proof of the taint persisting for six or seven years, and there was no reason to think that it had diminished in severity, for the younger child suffered as much as the elder. Other interesting cases are cited to prove that younger children may suffer most.

The Supposed Connexion between Rickets and Syphilis.—We may

believe, with confidence, that there is a pure rickets dependent on dietetic causes, which has nothing whatever to do with syphilis. It may easily be the fact that the existence of the rachitic state in an infant who has also an inherited taint of syphilis may give a decided tendency to bone disease, and more especially to affections near the epiphyses. There is no reason why the two causes should not mix.

Ulcers of the Palate and Pharynx.—Year by year the balance of evidence has more and more inclined towards the creed, that deep ulcerations of the palate and pharynx, where met with in young persons, are almost always syphilitic and not due to scrofula.

Malformations of Joints consequent upon Syphilitic Periostitis in Infancy.—Singular and very deceptive malformations of joints are sometimes produced by the irregular overgrowth of long bones in congenital syphilis. They are sometimes helped by alterations in the epiphyseal extremities, due to the same cause. Two illustrative cases are given.

Periostitis in Infancy: Arrested Growth of Radius.—Mr and Mrs C. suffered from syphilis together, and rather severely. An infant, born in May 1880, died. The second, born in 1881, was brought to Mr Hutchinson when fourteen weeks old. She had had snuffles, and was covered with a dusky papular eruption. These symptoms began at six weeks old; she had swelling and pain about the left wrist, and it is on this account that the case is mentioned. Six or eight months later the child had got rid of all symptoms, excepting enlargement of the lower end of the radius. It appeared that the growth of the radius had been arrested, for the overgrowth of the ulna was pushing the carpus over to the radial side.

Ringworm of the Tongue possibly sometimes in connexion with Inherited Syphilis.—It is well known that affections of this organ at later stages are exceedingly rare in connexion with inheritance, whilst they are very common in the acquired form. We may probably conclude that this form of superficial glossitis is, in some cases, of syphilitic origin, but in the majority not so. It is exceedingly difficult to diagnose between the two.

(To be continued.)

Part Fifth.

MEDICAL NEWS.

UNIVERSITY OF EDINBURGH.—LIST OF DEGREES CONFERRED IN THE FACULTY OF MEDICINE.—*The following received the Degree of Doctor of Medicine*:—Robert Smail Anderson (M.B. and C.M.), John Bate Bawden (M.B. and C.M.), Frederick Fielding Bond (M.B. and C.M.), John Henry Brown† (M.B. and C.M.), Samuel George

** Those who have obtained Gold Medals for their Dissertations.

* Those marked thus (*) passed with distinction.

† Deemed worthy of Competing for the Dissertation Gold Medal.

‡ Commended for their Dissertations.

Campbell† (M.B. and C.M.), Edward Carmichael** (M.B. and C.M.), Edwin Albert Chill (M.B. and C.M.), Archibald Campbell Clark† (M.B.), Arthur Henry Weiss Clemow† (M.B. and C.M.), Frederic Hamilton Crowdy† (M.B. and C.M.), Alexander Somerville Cumming† (M.B. and C.M.), Archibald Donald† (M.A., M.B., and C.M.), William Simpson Flett (M.B. and C.M.), Thomas Alexander Fraser† (M.B. and C.M.), William Gay† (M.B. and C.M.), Clement David Grierson Haile† (M.B. and C.M.), George Henderson (M.B. and C.M.), William Whittington Herbert† (M.B. and C.M.), William Albert Holmes† (M.B. and C.M.), William Hunter** (M.B. and C.M.), James Kellie, Walter Scott Lang† (M.B. and C.M.), William Lander† (M.B.), Bouverie Francis Primrose MacDonald (M.B. and C.M.), Allan Macfadyen** (M.B. and C.M.), Donald MacGregor (M.A., M.B., and C.M.), Dugald Macmillan (M.A., M.B., and C.M.), Augustus Alexander Matheson (M.B. and C.M.), Andrew Scott Myrtle (M.B. and C.M.), Thomas Nelson† (M.B. and C.M.), Frederick William Nietzsche (M.B. and C.M.), Ebenezer Henry Lawrence Oliphant† (M.B. and C.M.), Alexander Gordon Paterson (M.A., M.B., and C.M.), Andrew Melville Paterson** (M.B. and C.M.), Henry Whitby Phillips† (M.B. and C.M.), Joseph Priestley† (B.A., M.B., and C.M.), John Rees (M.B. and C.M.), Thomas Rennie Scott† (M.B. and C.M.), John Smith† (M.A., M.B., and C.M.), Charles Stein† (M.B. and C.M.), John Stiell (M.B. and C.M.), Arthur Jalland Stiles† (M.B. and C.M.), Ralph Stockman** (M.B. and C.M.), Thomas Edgar Underhill (M.B. and C.M.), Richard Vassie (M.B. and C.M.), Allan Ogier Ward† (M.B. and C.M.), John Humphrey Williams (M.B. and C.M.), Oswald Gillespie Wood† (M.B.), William Cleaver Woods (M.B. and C.M.), Peter Yates (M.B. and C.M.) *The following received the Degrees of Bachelor of Medicine and Master in Surgery*:—Andrew Aikman, John Allison, John Anderson, Wm. Andrew Anderson, Griffith Ap' Thomas, Jas. Auriol Armitage (B.A.), Wm. Octavius Robert Arnot, Giles Reynolds Ayshford, Walter Henry Bansall (B.A.), Arthur Edward Barlow, Aimé Georges Baschet, Samuel Beattie, John Biggam (M.A.), Victor Black, Edwin Gerald Blanc, Jean-François de Boissière, Albert Ernest Booth, Alfred Latour Borradaile, Joseph Edward Bowser, Walter Fletcher Boycott, David Gair Braidwood, Frederick Lenox Harman Brown, Thos. Hastie Bryce (M.A.), James Macintosh Campbell (M.A.), Edmund Capper, Edmund William Wace Carlier* (B.Sc.), John Greenwood Cassels, James Aitken Clark, Frederick Henry Clarke, Robert James Copeland, William Craig, John Cunningham, Albert Edward Curtis, Arthur Leopold Curtis, Edgar Nicholas Darwent, George Scott Davidson (M.A.), John Edward Davies, Frederick William D'Evelyn, David Somerville Doughty, Alexander Edington, Ahmed Fahmy, William Jordan Fairlie, Richard Herbert Joseph Fetherston, Oliver Field, Thomas Henry Fiske, John Grant Fletcher, Robert Sibbald Forrest, David Fraser, Donald Allan Fraser, Nutting Stuart Fraser, Peter Fraser, Robert Fullerton, Joseph William Gainer, Thomas Galbraith, John Galletly (M.A.), Leonard Dobbin Gamble, Patrick Clason Garson, Thomas Horatio Gibson, George Veitch Gilray, George Bainbridge Goodall, Robert Pope Ross Gordon (M.A.), James Graham, Allan Ewen Grant, George Filmer Grant, James Wright Grant, Thomas Paul Gray, Walter Duncan Grieve, Felix Oscar Guérin, George Lovell Gulland* (M.A., B.Sc.), Edmund Alexander William Hall, George Hall, William Henry Arthur Hall, George Hardyman, Frank John Lorimer Hart, John Francis Haswell, Lewis Arthur Hawkes, Charles Williams Hayward, Thomas Henderson, Henry Budd Hetherington, George Sibley Hicks, Richard Nicolson Highmoor, William Henry Hill, William Reed Hill, Francis Richard Berthon Hinde, John Robert Holmes, Robert Howden, Job Medwyn Hughes, Charles William Hunter, James Hutcheson, Theophilus Bulkeley Hyslop, William Henry Martyn Ingham, Edgar Montgomery Inglis, Robert Wilberforce Ingster, Robert Paton Jack, Robert Jardine, Frederick Howorth Jeffcoat* (B.A.), Frederick Miller Johnson, John James Johnson, Obadiah Johnson (B.A.), James Phillips Johnston, Benjamin Jones, Thomas Joseph Jones (B.A.), Frank Ambrose Jukes, Charles Pool Kennard, Frederic Truby King,* William Henry Edward Knaggs, John Hugh Alexander Laing, Gregory John Lamb-O'Neil,* James Lamrock, John Dickinson Leigh, Peter Alexander Lindsay* (B.A.), Henry Harvey Littlejohn (M.A.), Elbertus Lucas Bernhardus Loubser, Donald Campbell Archibald M'Allum, John M'Andrew, William Macanish, John Macdonald, Thomas Macdonald, Ian Donald Mackay (B.A.), Thomas Fraser M'Farlane, Thomas Mackenzie (M.A.), William Alexander Mackintosh, Herbert William George Macleod, John M'Naughton, Peter Burden M'Nicol, Courtney Clarke Manifold, Alfred Mann, John Duncan Menzies, Daniel Stefanus van der Merwe, George Alvie Mitchell, Thomas Morris, Arthur Morrow, Charles James Morton, George Wilkins Moseley, James Musgrove, Andrew William Nash, James Thomas Charles Nash, William Samuel Nason, Matthew James Oliver, Robert John Paton, Joseph Aldric Perez, William Philp (M.A.),

George Alexander Pirie,* John Pirie, George Herbert Pollard, Herbert Peter Pranker, Alexander Primrose, Adam Rolland Rainy (M.A.), William Bramwell Reid, William Symonds Percival Ricketts, George Bearhope Ritchie, Earnest Theophilus Roberts, Evan Vaughan Roberts, Frederick Charles Roberts, Robert Griffith Roberts, Robert Robinson, Briton Smallman Robson, John Ross, John Ross, John Ross Home Ross,* Allan Rupert Postance Russell, James Samuel Risien Russell, Daulat Marutirao Sangle, Samuel Radford Savage (B.A.), Harold Charles Lingham Scofield, David Wilson Scotland, Arthur Sellers, Richard Fleming Shepherd, Robert Dickson Shiels, George Thomas Sinclair, Robert William Smeddle, Hugh M'Minn Smellie, George Purves Smith, James Smith, John William Smith,* Alexander Carson Smyth, Charles Edward Grey Stalkartt, William Steven, Thomas Stevenson, John Stupart-Archibald, Donald George Sutherland, George Alexander Sutherland (M.A.), William Hope Sutherland, William George Sym, William Symington, John Robert Talbot, John William Talent, Arthur Hope Taylor, Henry Ingster Taylor (B.A.), Inglis Taylor, James Taylor (M.A.), William Taylor, Charles Clark Teacher, Andrew Thomson, Frank Wyville Thomson (M.A.), Joseph Tillie,* John Kay Tomory, John William Travell, Alan Leonard Smith Tuke, Ernest Blaker Turner, William Henry Turton,* Edward Munro Tyrrell, Alexander Henry Vassie, Humphrey Warine Vernon, Wilfred Vickers, David Elder Walker, Percy Wardle, Clarence Henry Waters, John Lawson Welch (M.A.), James Albert Wetherell, John Hewetson Whiteside, John Wilkinson, Charles Louis Williams, Adam Donaldson Wilson, Arthur William Wilson, George Wilson, James Wilson, William Briscoe Wilson, William Cheyne Wilson, Henry Wellsted Wise,* Arthur Wood, William Sidney Ridout Woodforde, Edward Robert Woodhouse, Daniel Jacobus Louw van Wyk, J. A. Wetherell.

EDINBURGH UNIVERSITY PROFESSIONAL EXAMINATION.—The following is the official list of candidates who have passed the second professional examination:—Robert Abernethy, H. J. Bailey, John Barclay, J. A. B. Bayly, L. A. W. Beck, H. A. Becker, W. J. Bell, Arthur Birt, W. C. Bluck, G. P. Boddie, D. J. M. Bone, H. E. Bower, N. L. Boxill, James Brodie, G. M. Brown, F. O. Buckland, A. W. T. Buist-Sparks, A. E. Bullock, James Cameron, Peter Campbell, W. G. Campbell, W. R. Chew, Arthur Clarkson,* Albert Coleman, John Cowper, Albert E. Cox, Frank Dendle, A. H. Douglas, J. J. Drinkwater, J. Edmondson, F. Elkins, C. Fleming, S. C. Fowler, A. H. Frere, F. J. C. Fulse, G. H. Gibson, R. W. Gibson, Railiton Gill, J. G. Graham, James Harrison, A. C. Hartley, T. E. Hill, P. W. Hislop, T. D. H. Holmes, H. R. Hunt, J. R. Hutton, T. W. Irvine, W. P. Johnstone, W. W. Jones, John Laurie, H. T. G. van der Linde, Willie Lockwood, D. C. Longden, F. J. McCann, D. J. Macdonald, Daniel Macleod, W. G. Macpherson, Charles Malcolm, J. W. Martin, K. A. Matheson, J. G. Miller, H. M. Montgomerie, Patrick Murison, John Nightingale, L. S. F. de R. Norman, A. B. Northcote, W. B. Orr, C. H. L. Palk, Wm. Paterson, W. B. Paterson, T. D. Poole, E. W. Rayment, C. B. Reid, R. S. Rogers, Anguste Rouget, Andrew Rowand (M.A.), C. R. Scarth, R. G. Scott, R. B. Shaw, R. B. Simmins, James Smith, Hendrik Vos Steyn, A. R. Stoddart, W. D. Sutherland, E. E. Taylor, Mowbray Taylor, Isaac Thompson, W. T. Thomson, Robert Thin (M.A.), H. W. M. Tims, W. H. Tofft, F. C. Tothill, John Townsley, J. H. Traquair, A. H. H. Watson, J. R. Watson (B.A.), J. C. Webster (B.A.), J. D. Williams,* J. H. Wilson, Wm. Wilson, L. G. Wynn.

UNIVERSITY OF EDINBURGH.—The following is the official list of candidates who have passed the first professional examination, which was completed on August 7:—James Allen, W. S. Anderson, Robert Badger, T. S. Balfour, V. E. Barrow, R. M. Beattie, J. H. Beilby, W. A. Black, J. E. Brandt, John Brown Lester, W. A. Bryant, R. C. Buist (M.A.), S. B. J. Bulteel, T. L. Bunting, W. H. Bunting, T. J. Burton, F. S. Butler, E. S. R. Cadman, A. W. Campbell, A. W. Carter, A. C. Coles, J. J. Cowan, George Craig, D. B. Crerar, J. W. Crerar,* H. G. Critchley, (B.A.), G. M. Cullen, James Currie, William Currie (M.A.), B. E. Dalison, Henry Dardenne, G. D. Darlington, A. J. Dearden, J. R. Dickson, C. C. Douglas,* D. G. Douglas, J. J. Douglas, A. G. Dow, J. W. Dowden, A. S. Duncan, William Everett, H. C. Evison, B. G. Ewing, Edward Fawcett, Samuel Fergusson, Ebenezer Forsyth, J. S. Fox, Thomas Frankish, R. C. Fryer, R. V. Fulton, W. S. Gibb, W. S. Gibson, A. B. Giles, Colin Gordon, John Grant, J. D. Gray, H. W. Greatbatch, T. P. Greenwood, Guy Grindlay, E. B. Gwynn, A. E. H. C. Hallen, John Hardie, A. F. Hardy, J. W. Hart, C. E. Harvey, T. R. Henderson (M.A.), George Hennan,* M. L. Hewat, O. B. Holland, A. C. Houston, H. C. Hudson, J. C. Jameson, E. C. P. Johnstone, Peter Jones, P. M. Kyle, James Lackie, H. G.

* Those marked thus (*) passed with distinction.

Langwill,* G. E. Lanyon, Thomas Lawson (Huntly), Thomas Lawson (Dunning), William Leask, J. W. Leitch (B.A.), T. H. Littlejohn, G. V. Lockett, F. A. L. Lockhart, William Lundie (M.A.) S. G. M'Allum, A. H. W. Macdonald (M.A.), R. P. Mackenzie, F. J. M'Ketterick, A. J. Mackintosh* (M.A.), John M'Laren, Alexander Maclean,* E. J. Maclean,* Charles Macmaster, F. W. Mann, G. B. Marshall, W. O. Meek, H. G. Melville, H. N. D. Milligan, E. A. Milner, G. B. Mitchell, G. H. Monro, A. W. Mortlock, F. W. Moss, Daniel Murray, J. S. M. Nurse, Maxwell Ogilvy-Ramsay (M.A.), William Oliver, J. C. Palmer, Walter Paterson, L. G. Peters, S. A. Pike, J. F. Pougnet, A. F. M. Powell, Kanta Prasad, E. W. Rahn, W. H. Ralph, J. F. Richardson, M. J. Richardson, E. E. Roberts, J. C. Robertson, J. S. Y. Rogers, Isaac H. Roes, H. G. F. E. le Roux, H. A. Rowland, R. D. Rudolf, Alexander Rutherford, R. A. St Leger, L. S. Stenhouse, W. J. Shaw, L. M. Silver, Clayton Simpson, E. M. Smith, J. L. Smith (M.A.), J. W. Smith, Jas. Spencer, W. C. W. Stain, T. E. K. Stansfield, E. G. B. Starkie, Frank Stevenson, Russell Sturgis-White, J. A. Taylor, G. W. Thompson,* Arthur Thomson, W. E. F. Thomson (M.A.), Geo. Thornton, Geo. Thynne, J. A. Thynne,* F. P. Trench, N. G. Trotter, Herbert Watthews, S. R. Webb, David Westwood, Abraham Wheeler, P. C. White, E. M. Wilkes, George Wilkinson,* A. W. Williams,* A. F. Wilson, G. M. Wilson, J. J. Wilson, Richard Wyse (M.A.), J. Y. S. Young, T. M. Young.

ROYAL COLLEGE OF PHYSICIANS, EDINBURGH.—The following gentlemen passed their final examination for the degree in Medicine at the sittings held on 9th August 1886, and were admitted L.R.C.P. Ed.:—Frederick James Burman, Rotherham, Yorks; Edward Hopkins, Birmingham; John Cawthron Kershaw, Leeds; Harding Henheat Tomkins, Gloucester; James M'Nish, Walsall.

BRITISH MEDICAL SERVICE.—List of Surgeons on Probation in the Medical Department of the British Army who were successful at both the London and Netley Examinations on 30th July, 1886.

No.	Name.	Marks.	No.	Name.	Marks.
1.	Davidson, J. S., ...	5575	31.	Donegan, J. F., ...	4200
2.	Will, J., ...	5565	32.	Donaldson, J., ...	4195
3.	Moir, J., ...	5383	33.	Mathias, H. B., ...	4175
4.	Fallon, J., ...	5375	34.	Bent, G., ...	4168
5.	Salvage, J. V., ...	5308	35.	Barefoot, G. H., ...	4166
6.	Fowler, J. F. S., ...	5210	36.	Newlands, F. R., ...	4160
7.	Aldridge, A. R., ...	5190	37.	Windle, R. J., ...	4143
8.	Bostock, R. A., ...	5008	38.	Hall, R. J. D., ...	4120
9.	Fayrer, J., ...	4992	39.	Marder, E. S., ...	4115
10.	Walker, C. P., ...	4950	40.	Allport, C. W., ...	4042
11.	Macdonald, C. J., ...	4930	41.	Russell, J. J., ...	4030
12.	Tatham, C. J. W., ...	4907	42.	Edye, J. S., ...	4013
13.	Clarkson, T. H. F., ...	4828	43.	Scott, G., ...	4005
14.	Austin, H. W., ...	4715	44.	Browning, T., ...	3982
15.	Garner, C., ...	4689	45.	Bate, L. A. F., ...	3960
16.	Wright, R. W., ...	4685	46.	Trotter, W. J., ...	3910
17.	Bailey, W. F., ...	4665	47.	Hosie, A., ...	3905
18.	Eckersley, E., ...	4655	48.	Marks, G. F. H., ...	3896
19.	Cottell, R. J. C., ...	4635	49.	Holyoake, R., ...	3890
20.	Deacon, J. G., ...	4585	50.	Buist, R. N., ...	3878
21.	Greig, D. M., ...	4577	51.	Watson, J. J. C., ...	3785
22.	Burrows, J. R., ...	4531	52.	Whaite, T. D., ...	3741
23.	Keatley, J., ...	4445	53.	Knaggs, H. T., ...	3710
24.	Hennessy, D., ...	4436	54.	Le Queane, F. S., ...	3670
25.	Saunders, D. M., ...	4410	55.	Travers-Smith, V. E., ...	3626
26.	Kiddle, W., ...	4337	56.	Smyth, N., ...	3613
27.	O'Callaghan, D. M., ...	4313	57.	Cronin, C. S., ...	3595
28.	Whitty, M. J., ...	4294	58.	Dowman, W., ...	3560
29.	Cummins, H. A., ...	4285	59.	Foott, R. E., ...	3510
30.	Kelly, R. E., ...	4235			

LIST OF CANDIDATES who were successful for appointments as Surgeons in the Medical Staff of Her Majesty's Army, at the Competitive Examination in London on the 9th and following days of August 1886.

No.	Name.	Marks.	No.	Name.	Marks.
1.	Morgan, F. J., . . .	3180	22.	Gray, W. L., . . .	2380
2.	Hale, C. H., . . .	3050	23.	Salmon, L. E. A., . . .	2370
3.	Burnside, E. A., . . .	2895	24.	Holt, M. P., . . .	2360
4.	Poole, W. C., . . .	2870	25.	Steill, D., . . .	2360
5.	Horrocks, W. H., . . .	2830	26.	Morgan, J. C., . . .	2340
6.	Raymond, G., . . .	2765	27.	Weir, C. J., . . .	2330
7.	Thurston, H. C., . . .	2750	28.	Hinde, A. B., . . .	2325
8.	Reily, A. Y., . . .	2660	29.	Bullen, J. W., . . .	2320
9.	Scott, B. H., . . .	2655	30.	Inniss, B. J., . . .	2310
10.	Wade, G. A., . . .	2655	31.	Penton, R. H., . . .	2310
11.	Hore, H. St G., . . .	2650	32.	Thacker, R. C., . . .	2300
12.	Watson, A. C., . . .	2620	33.	Pocock, H. J., . . .	2290
13.	Julian, O. R. A., . . .	2610	34.	Young, C. A., . . .	2265
14.	Corcroan, E., . . .	2560	35.	O'Brien, M., . . .	2240
15.	Cockerill, J. W., . . .	2540	36.	Hassard, E. M., . . .	2235
16.	McCulloch, J. C., . . .	2500	37.	Hilliard, G., . . .	2235
17.	Macdonald, S., . . .	2495	38.	Murphy, W. N., . . .	2200
18.	Ritchie, J., . . .	2490	39.	Elliott, C. R., . . .	2150
19.	Gray, E. W., . . .	2470	40.	Clark, S. F., . . .	2110
20.	Minniece, J., . . .	2460	41.	Sinclair, F. C., . . .	2090
21.	Browne, E. G., . . .	2380			

ONE of the "improvements" of the present age is what has come to be universally known as type-writing. There is no doubt that to authors and others this is a great advantage. It saves time, diminishes labour, and in not a few instances prevents the irritation which so often results from attempts to read illegible hand-writing. It has also provided ladies with a new occupation. For it is not now necessary that authors or illegible writers should invest in a costly machine. They have but to send their MSS. to a type-writing office, whence their productions will be returned in a style which will show how they look in print, and at the same time serve as a first proof. This is a method which may be specially commended to members of the profession who have to prepare papers to be read at meetings of societies and afterwards published. Were it adopted, it might lead to improvements in the papers themselves, and in the prevention of delay in the publication of Transactions.

A MOST interesting account has lately been sent us of a beginning which has been made by an old pupil of this school—Dr Wykeham Myers, of Takow, Formosa—in the education of natives in medicine and surgery. The curriculum is a full one, and the standard of efficiency, as proved by the questions set and answered, is evidently high. Dr Myers is surgeon to the David Manson Memorial Hospital, and his work there is well known to the readers of this Journal.

OBITUARY.

DEATH OF DR J. MATTHEW DUDGEON.

ON Friday, 13th of August, this young practitioner died in the most sudden and unexpected manner. For a week or two he had been ailing, and had in the street, about ten days before his death, experienced a sudden and severe attack of angina pectoris, which naturally caused him considerable anxiety. He then consulted his old friend Dr Affleck, who, along with Dr Robert Moir of George Square, had kindly given him advice, and had counselled a complete rest for some weeks. He had been arranging for this, when suddenly, just when talking to Dr Moir, a second attack came on, which was immediately fatal. Of indomitable energy, great activity, and with a pleasant, cheerful manner, Dr Dudgeon had during the past few years been building up a very large practice among the working-classes. He was surgeon to the Tramway Company, to a parochial district of Edinburgh, and to many clubs and societies. He was an Edinburgh graduate, and after a year or two in passenger ships, settled at Comrie, where he stayed for two years, and then came to Edinburgh; and at his death was only in his thirty-second year.

CORRESPONDENCE.

To the Editor of the Edinburgh Medical Journal.

"AN UNSUCCESSFUL CASE OF ALEXANDER'S OPERATION."

IN last month's Journal Dr Alexander, eager, doubtless, to champion the operation which bears his name, has fallen into several errors which require correction. The first mistake is one for which I can see no excuse. Dr Alexander "takes for granted" that the uterus in the case reported was retroflexed, although it is twice described as being retroverted. It is usually better to say what a thing is, and not what it is not. Again, Dr Alexander has misread the account, when he says that "he had foretold the failure that took place in this case." The date of the operation was October 1884—some months before its failure was foretold. Why should all cases where the slack of the ligaments is not packed into the wound now fail, when Dr Alexander's first cases treated in this way were successful? A little further on it is taken for granted that there was evidently more wound disturbance than should have taken place. The temperature was once $100^{\circ}4$; and as in five out of eleven of Dr Alexander's first twenty cases where the temperature is mentioned exceeded $100^{\circ}4$, I judge that there was not more than the average wound disturbance. The patient was kept five weeks in bed, for the same reason that I do not allow any woman who has had her ovaries and Fallopian tubes removed to sit up until her first menstrual period has been passed.

Instead of the ends of the ligaments slipping back as soon as the

patient got up and went about, they were evidently firm four weeks after she had been out of bed, as described in the paper. I shall take notice of only one more error into which Dr Alexander's haste and parental love has led him. He says "that the removal of the ovaries had been previously contemplated, but pregnancy barred the way." There is not the slightest foundation even for this statement. I first heard of the patient many months after the birth of the last child, and this is distinctly stated in the short paper. It is also stated that the treatment, which had been successful before, was unsuccessful after the birth.

The correspondence has caused me to examine the ovaries, which I had not seen for eighteen months, and which I had described from recollection. Dr Alexander will be glad to hear that both they and the Fallopian tubes are far from healthy. Fortunately, they had been kept, along with all others removed by Dr Keith and myself, and I am glad to say that they would make a poor show, as regards numbers, with the soup-platefuls which one hears of as being shown before learned societies. It does not appear to me to be of much importance whether the ovaries, in this case, were healthy or not. Two years ago the woman was useless: she was sick nearly every day; she was commencing to be a laudanum drinker, and her medical man insisted on something being done. Now she is in perfect health.

When one hears that there are several gentlemen in Liverpool who are experts at shortening the round ligaments, one is inclined to ask if there is no one there who is an expert with the Hodge pessary. Here, few backward displacements of the uterus cannot be cured with a pessary, and the women are not in the habit of removing these supports unless they hurt.

I regret the necessity for correcting so much in Dr Alexander's letter, but really the statements he has made are so misleading that I could not allow them to pass without some notice.

SKENE KEITH.

To the Editor of the Edinburgh Medical Journal.

THE SEQUEL OF A CASE OF SHORTENING THE ROUND LIGAMENTS FOR PROLAPSE OF UTERUS.

EDINBURGH, 17th August 1886.

SIR,—As doubts have been thrown by many surgeons as to the ultimate benefit derived from this operation, I am glad to inform your readers that I have a case at present in Craiglockhart Poorhouse, upon whom I operated in January 1885. Since she left the Infirmary ward she has been employed as an outworker. She is now a worker in Craiglockhart Poorhouse, where the resident-surgeon will be glad to show her to any medical man visiting there. I need scarcely add that she has had no return of the prolapse, and is able for hard bodily fatigue.—Your obed. servant,

ALEX. J. SINCLAIR.

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Part First.

ORIGINAL COMMUNICATIONS.

I.—FIBROUS POLYPI COMPLICATING THE PUERPERIUM.

By J. HALLIDAY CROOM, M.D., F.R.C.P.E., F.R.S.E., Physician to, and Clinical Lecturer on Diseases of Women, Royal Infirmary; Physician, Royal Maternity Hospital; President, Obstetrical Society, etc.

(Read before the Edinburgh Obstetrical Society, 9th June 1886.)

THE influence of fibroid tumours on conception, pregnancy, parturition, and the lying-in, is well recognised. They interfere with conception, they shorten pregnancy, they at times obstruct labour, and they complicate the puerperium by interfering with involution, and causing secondary hæmorrhage, or as the sequel shows, by inducing septicæmia. These remarks apply mainly to fibroid tumours, properly so called, occurring in groups. The records of fibrous polypi or pediculated submucous fibroids complicating the puerperium are comparatively rare. In some cases parturition and the subsequent changes which go on during the puerperium have exercised a most satisfactory result on even large tumours. These cases, however, are comparatively seldom met with. Lohlein¹ relates a most important observation where a large fibroid tumour which had been diagnosed before pregnancy was diminished greatly during the puerperium; indeed, in a subsequent pregnancy the uterus did not reach its usual size. Kaufman² mentions a case where he saw a huge fibroid disappear after abortion, and did not appear again in a subsequent pregnancy. The influence they exert on labour, and their management during the process, do not fall into the scope of this communication.

I have at present to deal only with submucous fibrous polypi complicating the puerperium. So far as I can find, the records of such cases are comparatively scanty. Dr Ramsay,³ Broughty-Ferry, reported to the Edinburgh Medico-Chirurgical Society in 1858 a case, in which a submucous pediculated fibroid weighing two pounds gave rise to hæmorrhage in the third stage, and was expelled spontaneously, though gangrenous, on the tenth day post-partum.

¹ *Zeitschrift f. Geburtsh. u. gynäk.*, i. 1877, s. 121.

² *Monatschr. f. Geburtsh.*, 1862.

³ *Edinburgh Medical Journal*, July 1858.

The patient made an excellent recovery. In St Thomas's Hospital Reports for 1870,¹ Dr Sedgewick reports a case of gangrenous submucous myoma of the posterior wall of the uterus, the gangrene having been caused by the injection of liquor ferri perchloridi on account of post-partum hæmorrhage immediately after the birth. Süsserott,² in his inaugural dissertation, refers to cases published by Maunoury and Ashwell, in which similar gangrenous tumours were spontaneously expelled during the puerperium. There are recorded other cases by Fallin, Tarnier,³ Oldham, Priestly, and Valtorta, in which the tumour was expelled by simple uterine contraction without being either gangrenous or decomposed, with an entirely favourable result to the mother. The majority, it would appear, of these submucous fibroids do not become gangrenous; when they do so, it is obviously from their coming in contact with the external air, or from direct injury during labour, or the application of some irritant, as in Sedgewick's case. A form of gangrene or necrosis may occur in subserous tumours or interstitial tumours after labour, but this must be carefully differentiated from that occurring in the submucous variety. Gusserow finds that when purulent degeneration and gangrene take place in the submucous variety, it is the result of changes in the circulation due to the uterine contraction. Often the subserous tumours become larger and softer after labour, and give undoubted appearances of fluctuation. This apparent enlargement is due in many cases to the involution of the uterus, the tumour appearing larger in proportion than before. In other cases they really do get larger and softer, owing to serous infiltration from the disturbance of the circulation.

Martin⁴ and Horwitz⁵ both mention cases of submucous fibroid in the puerperium which became gangrenous, and gave rise, through septicæmia, to a fatal result.

Kuchenmeister⁶ had a case in which a tumour weighing about a pound was expelled on the forty-fourth day post-partum, after having given rise to high fever from suppuration.

CASE I.—Mrs S. came under my observation years ago as an hospital out-patient. She had an enlarged retroverted uterus. For this a sound was passed and a Hodge pessary introduced, and shortly afterwards she became pregnant, and was delivered at term. Two years ago she came under my care again, at St Luke's Home, suffering from menorrhagia as well as intermenstrual hæmorrhage. The uterus was found enlarged 2 inches in the first stage of retroversion. A fibrous polypus was suspected, and after considerable trouble I managed to dilate the cervix sufficiently with Tupelo tents to allow me just to feel the base of the tumour. The uterine

¹ *St Thomas's Hospital Reports*, vol. i., 1870, p. 349.

² Süsserott, *Inaug. Diss.*, Rostock, 1870.

⁴ *Zeitsch. f. Geburtsh.*, i. 1870, s. 232.

⁶ *St Petersburg Med. Zeitsch.*, 14, s. 294.

³ *Die Neubildungen des uterus.*

⁵ Gusserow, *loc. cit.*

contractions which this occasioned, however, were so violent, and the pain and general disturbance so great, that I was obliged to desist. She passed then into the hands of my friend Dr Kirk, of Bathgate.

I heard no more of her until she was sent back to me by him with her uterus enlarged to the umbilicus, and with her menstruation suppressed for five months. In the note sent to me with her by Dr Kirk he expressed the opinion that pregnancy alone accounted for the condition. On her arrival in the town I examined her, and found the uterus enlarged corresponding to a six months' pregnancy. The cervix was somewhat dilated, and through it I could feel the membranes with difficulty. Ballottement could be practised. There could be no doubt that she was pregnant. The following evening labour pains supervened, and she was delivered of a five months' foetus and placenta. Accompanying the third stage there was very profuse hæmorrhage, so much so that I was obliged to explore the interior of her uterus, which I did under chloroform, and with the assistance of my friend Dr Milne Murray.

Attached to the fundus by a thick, though soft pedicle, I found a well-marked fibrous polypus, about the size of a small orange. After consultation with Dr Murray, we determined, owing to the patulous condition of the os and its easy access, to remove the tumour. Fixing a volsella through its substance, and at the same time steadying the fundus uteri, it was easily removed by avulsion. The hæmorrhage ceased and the uterus firmly contracted. Immediately after its removal the cavity of the uterus was washed out by a hot uterine douche of 1-2000 corrosive. The following day the uterus was again washed out. There was no hæmorrhage, but large pieces of apparently bleached decidua passed, with large extremely foetid sloughing masses.

On the third the patient was quite well. On the fourth day the discharge was offensive, and was accompanied by flaky pieces of foetid decidua. The uterus was again washed out. For two days thereafter the patient continued to do well, but on the second day there was a rise of pulse and temperature, extreme tenderness over the abdomen, and she died apparently from acute septicæmia on the following morning. No post-mortem was allowed.

I attribute the death of this patient to septicæmia, due to gangrene either of the stump of the tumour, or else to a second polypus becoming gangrenous through the admission of air. The former is, I think, the most likely explanation, judging by the early appearance of the flaky sloughing mass, and the fact that the discharge was offensive from the first.

CASE II.—Mrs C. S. was delivered after a normal labour. On the fifth day post-partum, the hæmorrhage being profuse and noticeably offensive in character, my friend Dr John Playfair—under whose charge the lady was—proceeded to explore the

cavum uteri, and found an irregular rough body projecting into it, which he diagnosed to be a uterine polypus. He asked me to see the case with him. With careful antiseptic precautions I dilated the cervix uteri with my fingers, and at the fundus uteri I discovered the mass which Dr Playfair had described to me, and finding it pediculated and soft, easily twisted it off with my fingers. The mass was about the size of a Tangerine orange, and of the usual structure. The discharge for many days was very offensive. The uterus was washed out daily with warm corrosive, and the lady made an excellent recovery.

The two cases which I have just recorded present characteristic examples of a rare complication of the puerperium. Judging by the records of the cases recorded, many of these polypi were extruded spontaneously. The presence of such growths during the puerperium is not without grave danger. Sometimes they soften, break down, and decompose, and are the cause of peritonitis, and become the seat of gangrenous degeneration. This is chiefly the case in the submucous fibroid projecting into the cavity of the puerperal uterus similar to those which I have just recorded.

Similar cases are related by Senderling,¹ Yeld,² Kiwisch,³ Wynn Williams,⁴ and Duncan.⁵ Wynn Williams relates a case where a large submucous fibroid, which obstructed labour, was enucleated and removed in his efforts to break up the child. Weber⁶ relates a case in which turning had been had recourse to, and where a tumour as large as a man's fist was removed with the placenta.

Grouping together the cases which have hitherto been described, and adding my own two cases, it is convenient to arrange them thus:—

1. Non-gangrenous, in which a healthy tumour was expelled without any artificial aid,	5
2. Gangrenous,	6
3. Gangrenous, or non-gangrenous, removed artificially with hand or instrument,	10

These constitute, so far as I know, the cases recorded,	—
making a total of	21

As the practical deduction from these we may formulate the rule, that when the tumour is easily accessible, and can be removed without a severe operation in the first few days of the puerperium, such artificial removal ought to be had recourse to in order to prevent the possibility of gangrene and septic absorption. Care must be taken that the whole tumour be removed, in case of the base

¹ Gusserow, *loc. cit.*

³ *Prag. Vierteljahrsschr.*, 1871.

⁵ Gusserow, *loc. cit.*

² *Loc. cit.*

⁴ *Obstetrical Transactions*, xvii. p. 172.

⁶ *Monatsch. f. Gebh.*, xxv. s. 187.

sloughing and giving rise to septicæmia, as in my first case. If there be any doubt as to the possibility of its entire removal, it had better be left alone and allow nature to expel it spontaneously. If, however, the removal involve a severe operation, it would obviously be prudent not to interfere. Of course in those cases where the tumour gives rise to septicæmia late in the puerperium, its immediate removal is matter of necessity. In all cases of removal of these growths in the puerperium, too much stress cannot be laid on the extreme importance of washing out the cavity of the uterus with corrosive daily, until every trace of fœtor has disappeared. In both my cases pieces of slough and very fœtid discharge continued for many days after the removal; and in spite of careful washing out, one ultimately succumbed.

Two exceedingly interesting cases were recorded after the reading of this paper by Professor Simpson and Dr Underhill.

II.—THE MASTOID PORTION OF THE TEMPORAL BONE.

By J. SYMINGTON, M.D., F.R.S.E., Lecturer on Anatomy, Edinburgh School of Medicine.

ALTHOUGH particular attention has recently been directed to the anatomy of the mastoid portion of the temporal bone, more especially in connexion with the pathology and operative treatment of inflammation involving its interior, still we believe that several points of interest have hitherto been overlooked.

The *pars mastoidea* may be defined as that portion of the temporal bone which lies behind the tympanic cavity and external auditory meatus, and external to the posterior part of the labyrinth. The mastoid process is placed at the outer and lower part of the mastoidea, and constitutes its smaller and less important division. Although many anatomists—following Albinus—still describe the temporal bone as divisible into three parts, viz., petrous, squamous, and mastoid, it is, of course, well known that the mastoid portion is not one of the original elements by the fusion of which the adult human temporal bone is formed. The mastoidea is generally regarded as forming with the petrous portion the periotic or petromastoid bone. The periotic is ossified in cartilage about the fifth month of fœtal life. According to Huxley,¹ it has three principal centres, which he calls prootic, opisthotic, and epiotic; of these the prootic and epiotic, besides assisting in the formation of the osseous labyrinth, extends outwards to form the *pars mastoidea*. Vrolik² has described the ossific centres somewhat differently, for, according to his account, the mastoid has two centres for itself, and there are also four for the petrosa. The difficulty connected with the

¹ *Lectures on the Elements of Comparative Anatomy*, 1864.

² Niederl., *Arch. für Zoologie*, 1.

determination of the exact number and situation of the centres for the periotic is due to the fact that its ossification is rapid, and the centres fuse quickly and so completely that all traces of the original lines of juncture are removed before the time of birth.

The mastoid portion of the temporal is often described as being formed solely by the periotic, but J. Gruber¹ showed that its anterior part is derived from the vertical plate of the squamosa. The line of union between the squamous and petrous portions of the mastoid, called by Gruber the "fissura mastoidea-squamosa," is readily seen on the outer surface of the temporal bone at birth. The squamous portion forms the outer wall of the mastoid antrum, and also sends downwards a process behind the annulus tympanicus, which afterwards develops part of the mastoid process. Gruber attaches great importance to the original dual nature of the pars mastoidea, but the name he suggests for the suture separating its two portions is somewhat misleading, and it would probably be better to call it the external petro-squamous suture. This suture is generally partially obliterated in the new-born child, and, as a rule, but few traces of it can be found a few months after birth. Its former position is often indicated by several foramina, which probably serve as channels for the passage of small blood-vessels from the mastoid antrum to the exterior of the skull. Sometimes the suture persists until adult life,² and then its situation shows that about the anterior third of the mastoid is formed from the squamosa.

In the infant the mastoid contains a single air cell. This communicates by a large opening with the posterior part of the upper chamber or attic of the tympanum. It is rather surprising that none of the standard English text-books on Anatomy, such as Quain, Turner, Gray, Holden, and Wilson, refer to the existence of the antrum mastoideum, although it is a cavity of considerable importance to aural surgeons, and is frequently mentioned in their works. It resembles the tympanic cavity in having a very thin roof separating it from the cranial cavity, but approaches much nearer the outer surface of the skull than does the tympanum.

In the adult the mastoid is described as being hollowed out into a number of communicating air cells, but Zuckerkandl³ has proved that the condition of the interior of the mastoid varies a good deal. He examined 250 adult temporal bones, and found that 36·8 per cent. were entirely pneumatic, 43·2 partly pneumatic and partly diploitic, while in 20 per cent. there were no air cells, and the bone was diploitic or sclerosed.

Although the anatomy of the mastoid in the infant and adult has been well worked up, there is very little known as to its con-

¹ *Wiener Med. Wochenschrift*, 1867, No. 3.

² See a drawing by Leidy in *Science*, vol. i. p. 507, 1883.

³ "Zur Anatomie des Warzenfortsatzes," *Monatsschrift für Ohrenheilkunde*, No. 4, 1879.

dition between infancy and puberty. The information regarding the growth of the mastoid after birth, that can be obtained from a study of works treating on the anatomy of the ear, is limited to two facts: firstly, that the mastoid process, which is absent at birth, is developed about the second year; and, secondly, that the mastoid air cells are not formed until puberty.

Most of the points of importance in connexion with the growth of the pars mastoidea can be illustrated by transverse vertical sections passing through about the middle of the mastoid process. Woodcuts, Fig. 1, Fig. 2, and Fig. 3, were made from life-sized drawings of such sections in an infant about 3 months old, in a girl 9 years old, and in an adult male subject. On showing these sections to Dr Peter McBride, he referred me to Dr A. H. Buck's work on the *Diagnosis and Treatment of Ear Diseases*, London, 1881, which contains three woodcuts very similar to mine. They were taken from an infant, from a child about 5 years old, and from an adult. So far as I am aware, all authorities agree in stating that the pneumatic spaces of the mastoid are not developed until puberty; but Buck's figure of the child 5 years old is described thus:—"Mastoid process of a child (æt. circa 5), with well-developed air cells or pneumatic spaces," p. 297, and the woodcut agrees with this description. He does not appear to give any further information about this specimen, nor does he express any opinion as to whether he regarded it as normal or otherwise.

Woodcut, Fig. 1, represents a coronal section in a child about 3 months old, 6 mm. behind the posterior wall of the external auditory meatus. It may be taken as a type of the infantile condition of the mastoid. The section opened the antrum mastoideum, the vestibule, and all the semicircular canals, and on the inner side was at the level of the place where the eighth nerve pierced the dura mater. The antrum was well developed, its greatest transverse diameter being 7 mm., and its vertical extent about the same. The outer wall was 2 mm. in thickness, and consisted of fine cancellous tissue, with a very thin layer of compact tissue on its outer side. The roof was very thin, and presented a suture continuous with that in the roof of the tympanic cavity. The figure shows the position of the opening from the antrum into the tympanum. It is seen to be placed on the inner part of the anterior wall, for the antrum extends not only backwards but also outwards, so that it reaches nearer the outer surface of the skull than the tympanum. The opening between the antrum and tympanum was triangular, and each side measured about 4 mm. There were no indications

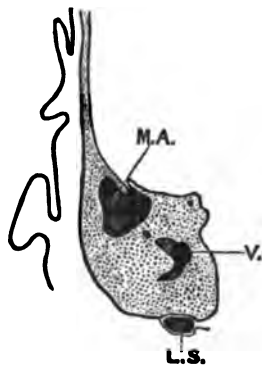


FIG. 1.

of a mastoid process in this section. It is not supposed to be developed until about the second year, although traces of it can often be seen a few months after birth in the form of a slight projection immediately behind the annulus tympanicus. There is one important relation of the mastoid antrum which is not shown in this section, viz., that of the lateral sinus. This sinus passes outwards from the torcular Herophili across the occipital bone to the posterior inferior angle of the parietal bone; it then turns downwards and inwards, grooving the inner surface of the pars mastoidea, and finally turns forwards to join the lateral sinus. It was divided close to its termination in this specimen. In infants the layer of cancellous tissue separating the mastoid antrum from the lateral sinus is generally about 5 to 7 mm. in thickness.

Dr J. A. Adams, in an interesting paper "On Certain Anatomical Relations between Abscess of Brain and Aural Disease," *Glasgow Medical Journal*, vol. xv., endeavoured to prove that, contrary to the general view, abscesses of the brain from aural disease are relatively more frequent in the adult than in the child. He based his opinion not only upon statistics, but also upon a comparison of the anatomy of the mastoid in the infant and adult. He showed that in cases of suppurative inflammation spreading from the tympanum into the mastoid the extent of mucous membrane liable to be involved was much greater in the adult than in the child, and, further, that pus would find its way to the exterior much more readily in the latter, on account of the thinness of the outer wall of the antrum and the presence of the external petro-squamous suture.

Woodcut, Fig. 2, is from a coronal section, in a girl 9 years old,

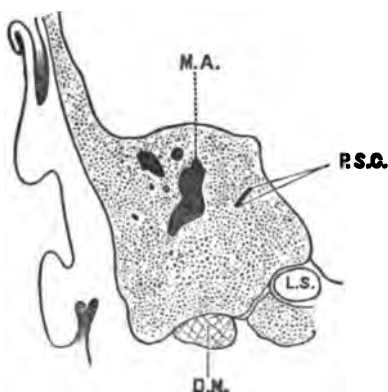


FIG. 2.

1 cm. behind the posterior wall of the external auditory meatus. It was a little further back than the specimen shown in Fig. 1, for it was posterior to the vestibule and the eighth nerve. It will be noticed that the bone has increased considerably in size, and the mastoid process is now quite distinct. The osseous growth has been mainly outwards and downwards from the mastoid antrum, so that the latter cavity is now placed more deeply. The main cavity of the antrum is about 1 cm. from the surface, but a process

from it extends a few millimetres nearer the exterior. This specimen does not agree with that of Buck's, as the bone below and external to the antrum is not converted into air spaces, but consists of fine cancellous tissue. I have examined the fresh skulls of

three children between the ages of 4 and 6 years, and in none of them did I find in the mastoid any air cells except the antrum. On the other hand, in a girl 13 years old the air cells were well developed, so that these appear to be formed at or a little before puberty.

The growth of the mastoid is as follows:—After birth the external petro-squamous suture becomes obliterated, this process being generally completed by the end of the first year, if not sooner. About the same time the mastoid process becomes distinct. There is a continuous formation of new bone from the periosteum on the surface, so that the external and inferior walls of the antrum become gradually thicker and thicker. Thus in a new-born child the outer wall is only 1 or 2 mm. thick, by the age of 5 years it is about 6 mm., while in the girl aged 9 years it was nearly a centimetre. The new bone is fine cancellous tissue. At about puberty this tissue undergoes a process of partial absorption, by which it is converted into a number of communicating air cells, which are lined by a delicate mucous membrane.

Woodcut, Fig. 3, is from a coronal section made 1·2 cm. behind the posterior wall of the external auditory meatus in an adult male subject. It is at about the same level as that shown in Fig. 2.

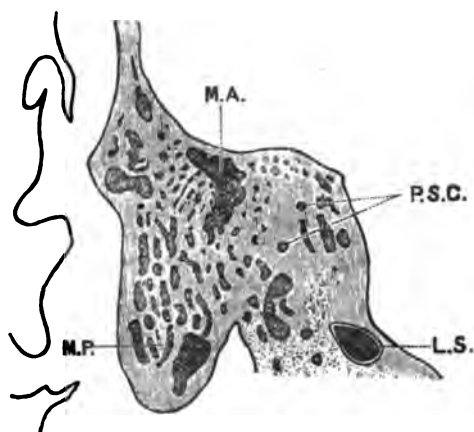


FIG. 3.

The pars mastoidea has been hollowed out into numerous small air cells communicating with one another and with the antrum.

The mastoid air cells vary considerably in size and extent in different bodies, and even on the two sides of the same skull, but it is very rare for them to extend backwards, as in a few cases described by Hyrtl, into the occipital bone. The occurrence of a mastoidea entirely pneumatic averages, as already mentioned, about 40 per cent. The combination of pneumatic and diploitic tissue, and also the presence of the latter only, can be readily explained

by the facts that we have demonstrated with regard to the growth of the mastoidea. They are due to the partial or complete failure of the process by which the diploitic tissue is converted into the pneumatic. With reference to the sclerosed mastoids, they are in all probability the result of chronic inflammation.

It is evident that the condition of the mastoid portion of the temporal bone in children, from say 4 to 12 years of age, differs considerably both from that of the infant and of the adult, and are worthy of careful study by aural surgeons.

If the mastoids of these children be compared with those of infants, it will be seen that the size of the air cavity and the extent of mucous surface is about the same in each. Should, however, suppuration occur, the chances of the matter finding its way to the exterior of the bone would be much less in children than in the infant, and an operation for the removal of the pus would increase in difficulty with the age of the child.

In adults the amount of air space and of mucous surface is much greater than in children. This may in some cases allow the products of inflammation to approach more nearly the external surface, but, on the other hand, the dangers of extension of the inflammation to the lateral sinuses are much greater. In children there is a thick layer of fine cancellous tissue between the mastoid antrum and the lateral sinus, but this may be converted in the adult into air cells, some of which are only separated by very thin bony septa from the sinus.

I regret that the absence of suitable material has prevented me from investigating the progress of the conversion of the diploitic tissue into the pneumatic, and especially the histological changes which must accompany that process.

III.—SUBJECTIVE SYMPTOMS IN EYE DISEASES.

By GEORGE A. BERRY, Ophthalmic Surgeon, Royal Infirmary, Edinburgh.

VII. SUBJECTIVE LIGHT AND COLOUR SENSATIONS (PHOTOPSIA, CHROMATOPSIA).

A SENSATION of light may arise even when there is no objective cause to account for it—that is, even when no undulations of the ether, such as are capable of giving rise to luminous impressions, find their way to the retina. A purely subjective sensation of this kind may be the result of a mechanical, electrical, or chemical stimulation of the nerve fibres in the retina or optic nerve, or of the centres of vision. The light so seen may appear coloured or uncoloured, according to the site and nature of the stimulation. Further, under certain circumstances, coloured luminous impressions may be received when the objective source is of a nature which

should only give rise normally to uncoloured light sensations. This may be due either to causes which separate the compound white light into its constituent rays, or to such as give rise to a selection of some rays, and at the same time a greater or less absorption of others.

Many are familiar, probably, with the brilliant colours which can be elicited in the dark by light continued pressure on the eyeball. The pressure generally first produces a colourless, ill-defined cloud, which gradually extends in all directions towards the periphery of the field of vision, and is followed by colours, blue, red, and green, etc., which, beginning at the centre, spread outwards in the same manner as gradually widening rings towards the periphery. On continuance of the pressure, these colours become less vivid and less regularly disposed, until the field, after some time, becomes entirely dark. On relief of the pressure, there are again produced light sensations, which are, however, much more irregular and not so variedly coloured. Direct pressure over a portion of the eye behind its equator also produces in the dark a so-called phosphene or sensation of light, which is referred to the opposite side of the field of vision. If a similar pressure be made in the light instead of in the dark, it is a darkish spot which is seen, the retina being rendered apparently by such mechanical irritation less responsive to stimulation by light. The slight stretching which the retina is subjected to by the action of the ciliary muscle also gives rise to faint phosphenes, which may be experienced by suddenly relaxing the accommodation in the dark. Phosphenes also occur in forced movements of the eye. These appear to be most marked on turning the eye upwards, and are probably due more to intermittent pressure of the oculo-motor muscles in the eyeball than to stretching of the optic nerve by the movement. Electrical stimulation also produces light sensations, mostly coloured. According to Schliephake, closing of a current ascending the optic nerve and opening of one descending produces a momentary bluish-violet illumination of the whole field of vision. Others describe also a yellowish tinge when the galvanic current descends the nerve. Of chemical irritants, that which has been most studied is *santonine*. This substance produces, according to Woinow, first the sensation of a violet, and then of a greenish-yellow colour, which is sufficiently marked to cause objects looked at to appear yellow. Its further action seems to increase the visual acuity without giving rise at the same time to coloured vision. Woinow explains the action of *santonine* by assuming that it first produces a stimulation of the violet-perceiving elements of the retina, which is followed by an exhaustion of these elements, while in the case of an increased visual acuity alone all the colour elements are equally excited. This explanation is, however, based on the prevalent theory of colour vision, which is in many respects very unsatisfactory.

The presence or absence of colour in the phosphenes, due

to stretching of the retina from any cause, may be of importance as affording some indication of the portion stretched apart from the locality of the field to which they are projected. The most peripheral portions of the retina are either totally colour-blind, or require a very much greater stimulation to give rise to colour impressions than more central portions. Consequently, when they alone are mechanically stimulated, the phosphenes are colourless. As a general rule, indeed, colourless phosphenes are due to stretching of the anterior part of the retina. Such colourless and indefinite phosphenes are complained of, too, where there is slight cyclitis. They take the form of more or less incomplete circles, and, as they are not constant, are in all probability brought about by movements of the ciliary muscle, which cause dragging of or pressure on the hypersensitive anterior part of the retina.

Mayerhausen has lately studied a form of photopsia depending on pressure caused by over-dilated vessels in the retina. The sensation to which pressure of this nature gives rise is that of faint irregularly defined streaks of light disposed in a radial direction round the point of fixation. The length of these streaks is variable. When long they branch dichotomously, and gradually fade away at the ends, never terminating abruptly. They disappear when the eyes are closed. The vaso-motor disturbances giving rise to this kind of subjective light sensation occur in constitutionally nervous individuals suffering from more or less neurasthenia, and the vessels through whose over-distension the symptom is caused are probably the outer network of capillaries which are mostly situated in the inner nuclear layer of the retina. Mayerhausen was able to study more closely than had previously been done the nature of this form of photopsia as under certain conditions, viz., violent exertion following prolonged use of the eyes, and at a time when the nervous system was exhausted by fasting he was conscious of the sensation himself, which can therefore only be looked upon as pathological when arising independently of such abnormal conditions. Sudden loss of vision, due to embolism of the central artery of the retina, very often occurs at night and escapes observation, but it is said that in cases where its occurrence is noticed by the patient there is at the same time a consciousness of subjective light sensations. Inflammatory conditions of the retina or nerve do not appear, as a rule, to cause photopsia, thus it is seldom that in optic neuritis any complaint of this kind is made. In glaucoma, however, besides the coloured halos round lights to be afterwards more particularly referred to, there are frequently subjective colour and light sensations which seem to be due to pressure. In cases of diffuse retinitis or choroido-retinitis, where there are generally to be found areas in which the retinal functions are defective, there is often at the same time a sensation of coloured and generally flickering spots

of different shapes and sizes complained of. These are always referred to the portions of the field which may be found on examination to correspond to the areas of the retina in which the visual defects are most marked, and are the result of irritation or dragging on the retinal elements. The subjective light and colour sensations met with in this disease often continue for long after the inflammation has quite subsided. They are most evident, as a rule, after any prolonged exposure of the eye to strong light, or after anything causing fatigue, either of the retina or body generally. Conversely they tend to become less marked or to disappear when the eye is rested, and therefore at night, in which respect photopsiæ of retinal origin differ from those caused by irritation of the visual centres, which are often most distressing during the night and at times when the eyes are not subjected to stimulation from objective sources. Retinal photopsia often continues for long after there is complete blindness, and is sometimes, though rarely, even so severe and distressing as to call for enucleation of the eye. Plateau, who was blind for forty years, had constantly subjective light sensations proceeding at different times from irritations of different portions of the retina, but always projected in accordance with the direction of the movements of the eyes. Notwithstanding the degenerative change which takes place in the retina, and is characteristic of retinitis pigmentosa, it is only very rarely that patients suffering from this disease are troubled with light or colour sensations. The effect of dragging or stretching in producing photopsia and chromotopsia is, however, most marked in many cases of detachment of the retina where such subjective sensations usually accompany the occurrence of the detachment, and are often complained of from time to time as the separation becomes more and more extensive. The colours mostly seen are red and blue, and mostly at the beginning of the affection, the wavy distorted outline of objects being often then bordered by these colours. In cases of sclero-choroiditis anterior, especially when the affection proceeds to the formation of staphylomata, subjective sensations of light and colour are very frequent. These, too, are probably mostly due to abnormal stretching, though they may possibly, to some extent, arise from inflammatory irritation as well.

Closely allied to cases of photopsia due to pressure on or stretching of the retinal elements, are those which appear to originate from circulatory changes, often of the nature of vaso-motor disturbances,—recurrent paralyses of the vaso-motor nerves of the retina. In some cases, too, of hyperæsthesia of the retina, complaints of coloured vision are made. This kind of chromotopsia is evidently the result of the response to stimuli which would otherwise, on account of their feebleness, be disregarded, but which are observed owing to the irritable condition in the retina itself, or in the more central portions of the visual apparatus,

just as hyperæsthetic individuals may be affected with pains for which little or no objective cause can be detected.

A curious form of subjective colour sensation has recently received a good deal of attention. It has mostly been met with in aphakia after cataract extraction, and consists in a more or less constant sensation of everything looked at being coloured a vivid blood-red. There is no veiling of the objects, but merely a marked red coloration. The condition to which the name erythropsia is generally given has not yet received a satisfactory explanation: it has been ascribed to the dazzling caused by light rays passing through the coloboma in the iris, or to that along with some fatigue of the retina. As it is met with under other conditions than aphakia and coloboma of the iris, and is by no means a common occurrence, it is impossible that these should in themselves be of paramount influence in the production of the erythropsia. Hilbert, for instance, has described the sensation as it has several times occurred to him. Though with otherwise normal eyesight, he has had several attacks of erythropsia, which have always come on after sleepless nights, and have disappeared after a good meal. When it occurs after cataract extraction, it seems usually not to come on until some months after the operation, and in cases, too, where everything has gone well, and good vision has been obtained. Thus Hirschler has described how, five months after having been operated on for cataract, he was troubled with this red vision, which lasted for two months and then disappeared. The only case which has come under my own observation after cataract extraction occurred one month after the operation, perfectly suddenly, and continued for several months. In this case, a healthy woman of 50, who obtained excellent vision ($\frac{20}{40}$), and from whose iris I had, as I am in the habit of doing, only removed a small portion, so that the resulting coloboma was small, and entirely covered by the lid, there was no evidence of any connexion between general fatigue and the symptom of red vision, which, though not constant, came on every day, and as often after a meal as before it. She herself ascribed it to glare, although there appeared to be no unusual circumstances of exposure to light connected with the case. The other eye was affected with immature cataract. Ophthalmoscopically there was nothing to account for it, and the symptom did not interfere with reading. Another case occurred in an extremely nervous lady, and came on after an exhausting mountain climb in Switzerland, the eyes having been subjected at the same time to a prolonged reflection of light from snow-peaks and glaciers. In this case there certainly was a coloboma in the only eye in which there was vision, the other having been lost by atrophy after a severe fall on the head, which had probably therefore caused fracture through the orbital foramen. The view entertained by Benson, Purtscher,

and others who have met with cases of erythropsia, viz., that it is due to hyperæsthesia of the retina, affords certainly the most probable explanation, though whether the condition of the retina is favoured by aphakia and the presence of a coloboma in the iris, or is brought about in some other way, is not clear. The following experiment, described by Chevreuil, shows the influence of strong light shining into the eye in producing a somewhat similar condition to erythropsia. Chevreuil allowed the sun to shine into his right eye while the left was closed. After two minutes' insolation, black objects on the table appeared to the right eye red and white-green, whilst with the left they were seen in their proper colours. This he gave as the explanation, too, of the historical "blood spots" which came before the eyes of Henri IV. and the Duc d'Alençon whilst playing chess in the open air a few days before the massacre of St Bartholomew.

The influence of fatigue or hyperæsthesia of the retina in giving rise to coloured vision is therefore undoubted. Some poisons which cause nervous fatigue occasionally also give rise to chromatopsia. Thus red and green vision has been met with by Bruce and others in cases of poisoning by bisulphide of carbon. Whether such poisons act by irritating the retina, or the centres which have to do with the perception of colour, is not certain. The latter seems the most probable, as not only are there conditions met with which point to the existence of such centres, such as hemianopia for colour alone, but the poisons produce at the same time other cerebral symptoms as well. Indeed, it is just possible that the cause of erythropsia may be a central irritation, unconnected altogether with operations for cataract, though associated, perhaps, with the conditions which have given rise to the loss of transparency in the lens.

Coloured vision may be produced again by the actual presence of coloured substances in the eye. Thus, when blood is effused into the vitreous, there is for a short time the sensation of a red veil covering the indistinctly seen objects. In cases, too, of hæmorrhage into the retina a red veiling is often seen which afterwards gives place to a yellowish or greenish discoloration of objects. In detached retina there is frequently, besides the colour and light sensations due to stretching of the retina, an appearance of a yellowish or greenish veil complained of, sometimes though the appearance is that of a more or less distinctly blue veiling. This Leber supposes may be due to contrast from the yellow subretinal fluid. Many authors have described a condition of yellow vision or Xanthopsia in jaundice. It is certainly not a common occurrence, however, and when it does occur is probably due to a yellow discoloration of the dioptric media, which for some reason or other is not often occasioned in jaundice. Here again, however, the pathology is not clear, although the explanation given seems the most probable one.

A common cause of coloured vision, owing to a change produced on the compound rays of white light as they enter the eye, is afforded by those states of the cornea which give rise to diffraction. This can only in so far be looked upon as a subjective sensation, in that the physical conditions, as far as the light is concerned, are such as would not under normal circumstances give rise to the sensation of colour. In looking at the street lamps, for instance, through the glass of a carriage window, which is covered with the closely packed minute particles of moisture which arise from the condensation on it of the vapour within, one frequently notices the lights surrounded by coloured halos. The same appearance may sometimes be observed without the intervention of the glass, and is then usually pathological and due to a similar arrangement of intransparent particles in the cornea. This symptom of seeing halos round lights is one of the commonest and most important indications of the early stage of glaucoma. The slight attacks of increased tension which only occur at intervals are accompanied by this symptom. When a flame of a candle or a gas jet is looked at, it is surrounded by a circle or halo of colours, which are separated from it by an uncoloured space. This uncoloured space is light where it immediately surrounds the flame, and dark towards the coloured rings, and the space as well as the coloured rings is broader the further the light is from the eye. The most external colour in the halo is always red, the most internal bluish, while at different parts of the circle there are brighter spots, so that the halo is not absolutely regular. The colours are seen with varying degrees of intensity in different cases, and are even sometimes, when very distinct, surrounded by a second halo, like a second rainbow, with this distinction, however, that the arrangement of colours in the second halo, which is much less distinct than the first, is similar to the first, and not reversed as in the case of the secondary rainbow. This is a proof that the phenomenon is due to interference or diffraction. A further proof of this, which was pointed out long ago by Donders, is that on covering the lower half of the pupil, the outer and upper and the lower and inner quadrants of the halo disappear. The halo, too, always remains stationary whether the light be fixed by the eye or not, or whatever be the state of accommodation of the eye. The cause of the distinctness of this appearance in glaucoma is probably owing to the haziness of the cornea and the simultaneous dilatation of the pupil. It occurs in non-inflammatory as well as in inflammatory glaucoma, so that it is in all probability due to the optical conditions which are introduced by disturbances in the lymph circulation within the cornea, although it has not yet, I think, been quite definitely proved that other of the dioptric media, more especially the lens, do not participate in the haziness. Although a frequent symptom in glaucoma, such coloured halos are by no means pathognomonic of that disease. They may be

seen in all cases where the cornea assumes from any cause a diffuse cloudiness. Even the secretion, which in some cases of conjunctivitis gathers across the cornea, may give rise to them. When spontaneously complained of, and especially when there is no appearance in the cornea at the time of examination to account for the halo, and when, too, it does not disappear on rubbing the eyes, its existence is strongly suggestive of glaucoma.

One form of subjective light sensation, viz., that which is in all probability of cerebral origin, still remains to be considered. One of the most common forms of this kind of photopsia is that associated with hemicrania. The symptoms of this peculiar affection are probably now well known to most medical men. It may begin in different ways, and last for a longer or shorter time, usually after prolonged bodily or mental fatigue, or at a time when there is more or less nervous exhaustion from want of food or sleep, it suddenly makes its appearance as a dark spot to one side of the field of vision in both eyes. The dark area slowly increases in size, and after some time becomes bordered by scintillating and often coloured zig-zag margins of greater or less intensity. The configuration of these margins of light often resembles the angular wavy outline of a fortification, and for this reason Airy gave to the affection, from which he himself suffered, the name of *Teichopsia*. The duration of the whole visual disturbance is generally rather less than half an hour. The appearances fade away from the centre towards the periphery, and are most frequently followed by severe headache, often accompanied by sickness, which lasts for several hours. The central nature of the subjective sensations just described is pretty definitely established by the fact that they occur, and, indeed, this is most frequently the case, in true hemianopic form. This could only be the case when the temporary disturbance, whether vaso-motor or of whatever other nature, was situated centrally with respect to the chiasma, unless possibly a vaso-motor disturbance took place simultaneously in symmetrical halves of both retinae. The latter possibility is unlikely, partly because it would not be in accordance with the anatomical arrangement, so far as is known, of the nerve fibres which supply the retinal vessels, but more especially because no such disturbance can be detected by ophthalmoscopic examination during the occurrence of the symptoms. On this latter point I am able to confirm the observations made by Foerster, Haskett Derby, and others. The occasional occurrence at the same time of other cerebral symptoms is another circumstance which is suggestive of a central origin. An interesting experiment, too, which points to the same conclusion was made by Kums. He found that phosphenes produced by pressure could not only be perceived during the attack, and whilst the subjective sensation of light was at its height, but that these were referred to a different plane from that to which the scintillating scotoma was projected. It seems probable, though,

that when the hemianopic or bilateral character is not marked the disturbance may in some cases really proceed from the retina. Thus I have occasionally met with excentric negative scotomata in one eye only which appear to have been the result of attacks of this nature. It would be interesting to try the result of Kums' experiment during the attack in such cases. Another kind of central subjective coloured vision, which is probably much rarer than that connected with hemicrania, takes the form of an aura preceding an epileptic fit. This I have not seen, but it is described by Hughling Jackson, and seems most commonly to be an erythroptopsia, everything appearing to the patient intensely red.

IV.—A CASE OF SUPPURATION OF THE PAROTID FOLLOWING OVARIOTOMY.

By SKENE KEITH, M.B., F.R.C.S.E., Special Assistant Surgeon, Royal Infirmary.

(Read before the Edinburgh Obstetrical Society, 21st July 1886.)

ON the 19th of April last I removed an ordinary multilocular tumour of the right ovary, weighing 25 lb., from a lady aged 46. There is nothing of particular interest to be noted about the operation, except that there were somewhat extensive parietal adhesions. The operation was completed in 25 minutes, and when the patient was put back to bed it was not anticipated that there would be any trouble. The progress made up to the afternoon of the fourth day was satisfactory, the pulse never having reached 90, and the thermometer not having registered 100°. At the evening visit the patient complained of cramp in the left lower limb, and on inspection the leg and thigh were found to be somewhat swollen, and the pulse had risen to 116. On the seventh day, in addition to the phlegmasia dolens and quickening of the pulse, the patient began to vomit frequently, but this sickness was stopped by a couple of doses of the ordinary white mixture of the London Hospitals. In the afternoon the temperature was 100°·8; pulse peculiarly irregular at 136. On listening over the heart, strange, indefinite, and irregular sounds were to be heard, causing one to think that some small clots had been carried from the veins of the left thigh to the heart. For the next four days there was steady improvement; the heart gradually slowed down, and on the evening of the tenth day it was contracting 80 times in the minute. The temperature was 99°·2. There had been little change in the swollen leg, but what little there was was of a favourable nature. On the afternoon of the eleventh day the right parotid began to swell, and by evening the patient could scarcely separate her teeth. The temperature had risen two degrees, and the pulse 20 beats per

minute. For the next eight days the swelling steadily increased, extending downwards so as to press on the trachea, and it became intensely hard. Then it got boggy, and there was free suppuration from the external auditory meatus, from several points in the cheek, and from two small openings which had been made, one behind and the other in front of the ear. On the fifteenth day after the commencement of the parotid swelling the patient was able to open her mouth far enough to eat bread and butter. The suppuration continued for sixteen days, and the unfortunate patient was able to go home at the end of seven weeks. There was wonderfully little disfigurement after the swelling had disappeared.

It is an interesting question whether or not cases of parotitis following ovariectomy are examples of reverse metastasis or not. From the number of cases I have heard of where the inflammation of the gland has occurred after operations unconnected with the genital organs, I do not believe that there is any such connexion, although in a paper read before the American Gynecological Society last year Dr Goodell says:—"Yet I am not sure that an element of sympathy does not exist even in this form (the septic) of suppurative parotitis." The accident is, however, so uncommon after ovariectomy—for example, this is my only case in over one hundred operations for the removal of one or both ovaries—that there appears to be great reason to believe that the inflammation must be purely accidental. In the last ten years of Dr Keith's practice one case of inflammation has occurred, and that was after the removal of a malignant tumour from the umbilicus. In this case there was no evidence of septicæmia, and there was no suppuration; and what can be said of a case of inflammation of the parotid, going on to suppuration, commencing on the morning of the day fixed for the removal of a cyst of the broad ligament?

V.—AN OUTBREAK OF CEREBRO-SPINAL FEVER.

By T. J. MACLAGAN, M.D., M.R.C.P., Physician in Ordinary to their Royal Highnesses Prince and Princess Christian of Schleswig-Holstein.

(Continued from page 242.)

CASE IX.—C. D., aged 17, resided in the hospital, and had been for a month a scrubber in the ward in which the females whose cases have been given were treated. On the 6th February she was seized with shivering, sickness, and pain in the head, back, and legs.

8th Feb. (third day of illness.)—Has heavy febrile aspect; intellect quite clear; face flushed; tongue moist, pretty clean; bowels moved by medicine; has a short cough; there is slight

wheeze in chest; has considerable thirst; no eruption; urine, sp. gr., 1034; abundant deposit of urates on standing, contains a trace of albumen; temperature in morning, 102°·8. Vesp.: pulse, 120; respirations, 28; temperature, 103°·4.

9th Feb.—Restless night; no cough; no rash; tongue furred; pulse of fair strength, 112; respirations, 36; temperature, 103°·2. Vesp.: pulse, 120; respirations, 32; temperature, 103°·8. To have 30 grains of chloral and bromide of potass.

10th Feb. (fifth day of illness).—Slept fairly; has natural expression; bowels moved once. Over whole of body is a bright red roseolar rash, consisting of spots which vary in size, are irregular in outline, are not elevated, and disappear on pressure. Pulse, 120; respirations, 30; temperature, 103°·8. Vesp.: pulse, 120; respirations, 30; temperature, 104°·6. Repeat draught.

11th Feb.—Restless night, very little sleep; expression natural; eyes natural; intellect clear; tongue dry in centre; rash same as yesterday; urine contains trace of albumen. Pulse, 124; respirations, 32; temperature, 103°·6. To have 30 grains Sod. salicyl. every three hours. Vesp.: pulse, 112; respirations, 28; temperature, 104°.

12th Feb.—Better night; feels sore all over; abundant rash, to the eye like that of typhus, only brighter in colour, and disappearing on pressure; urine, sp. gr. 1030, slightly albuminous, and depositing urates on standing. Pulse, 132; respirations, 32; temperature, 104°·4. Vesp.: pulse, 132; respirations, 32; temperature, 104°·6.

13th Feb.—Slept fairly without draught; is quite intelligent; tongue dirty, dry in centre; sclerotics clear, pupils large; rash as yesterday; skin of trunk markedly hyperesthetic; muscles tender to touch; bowels moved. Pulse, 124; respirations, 32; temperature, 104°·2. Vesp.: pulse, 120; respirations, 28; temperature, 104°·6.

14th Feb.—Slept fairly well; complains much of pain in legs; rash and general condition unchanged. Pulse, 120; respirations, 28; temperature, 103°·4. Vesp.: pulse, 120; respirations, 28; temperature, 104°.

15th Feb.—Fair night; tongue dry in centre; rash gone from limbs, and less of it on trunk, the same in character; skin of forehead peeling; cardiac systole feeble. Pulse, 132; respirations, 34; temperature, 102°·8. Wine, ζ iv. Vesp.: pulse, 128; respirations, 36; temperature, 103°·8.

16th Feb. (eleventh day of illness).—Slept well; eyes suffused; tongue dry; rash as last noted; slight peeling of skin of wrists and forearms, as well as of face; slight wheeze over chest. Pulse, 124; respirations, 28; temperature, 102°·4. Vesp.: pulse, 124; respirations, 36; temperature, 103°·4.

17th Feb.—Slept well; tongue moist at edges; bowels rather loose; rash fading; skin hyperesthetic. Pulse, 116; respirations,

36; temperature, 102°. Vesp.: pulse, 120; respirations, 36; temperature, 102°·6.

18th Feb.—Slept well; rash fading; still a few isolated spots, partially disappearing on pressure. Pulse, 116; respirations, 36; temperature, 101°·2. Vesp.: pulse, 116; respirations, 32; temperature, 102°·8.

19th Feb.—Restless night; troublesome cough; sibilation all over chest; rash all but gone; skin of forearms desquamating freely. Pulse, 110; respirations, 36; temperature, 101°. Vesp.: pulse, 112; respirations, 36; temperature, 102°.

20th Feb.—Slept well; wheezing in chest; stupe to be applied. Pulse, 104; respirations, 40; temperature, 100°. Urine albuminous, sp. gr. 1030, deposits urates on standing. Vesp.: pulse, 108; respirations, 36; temperature, 101°.

21st Feb. (sixteenth day of illness).—Rash quite gone; skin desquamating; tongue dry in centre; slight wheezing all over chest. Pulse, 112; respirations, 32; temperature, 99°·2. Vesp.: pulse, 108; respirations, 32; temperature, 100°.

22nd Feb.—Pulse dicrotous; forearms desquamating very freely; has a few sudamina on chest; urine contains trace of albumen and deposits urates. Pulse, 108; respirations, 28; temperature, 98°·6. Vesp.: pulse, 100; respirations, 26; temperature, 99°·4.

23rd Feb. (eighteenth day of illness).—Desquamating freely all over; omit wine. Pulse, 100; respirations, 24; temperature, 98°·2. Vesp.: pulse, 96; respirations, 24; temperature, 98°·4.

The temperature remained normal, and she convalesced well. During the early part of convalescence the kidneys acted very freely, and she passed large quantities (from 70 to 90 ounces per diem) of water, pale, of low specific gravity, and depositing on standing epithelial *débris*. On 8th March she passed 88 ounces; on the 10th, 80 ounces; on the 11th, 76 ounces; it gradually fell to the normal quantity.

This was the only case contracted in the house. As already stated, her duties were to clean the ward in which the cases already reported were treated.

CASE X.—W. C., aged 12, came to hospital on the 11th October 1878. Could give no very satisfactory account of his illness. He is very deaf, and even when made to hear, answers only half intelligently. Has depressed aspect; eyes suffused; abdomen tumid and tender to touch; tongue dirty; bowels moved once naturally. Temperature (in evening), 102°·6. Has several rose-coloured spots on abdomen.

12th Oct.—Four stools since admission; tongue dry. Pulse, 116, feeble; temperature, 101°; abdomen tumid and tender. Vesp.: pulse, 120; temperature, 103°·6.

13th Oct.—Restless night; has had four pale and loose stools in

last twenty-four hours; tongue dirty, dry in centre. Pulse, 120; temperature, 105°. Abdomen tumid. To have wet pack. Vesp.: pulse, 120; temperature, 104°·6.

14th Oct.—Restless night, with noisy delirium up to 5 A.M.; slept for two hours after that; tongue dirty; has several rose spots on chest and abdomen; abdomen tumid. Pulse, 112, feeble; temperature, 104°·2. To have 4 ounces port wine. Vesp.: pulse, 116; temperature, 103°. To have 15 grains of chloral with the same quantity of bromide of potass as a draught at bedtime. To be packed.

15th Oct.—Slept for three hours after draught; was quieted also by packing; has had four pale loose stools; tongue moist and dirty; abdomen tumid; rose spots; urine, sp. gr. 1020, albuminous, deficient in chlorides. Pulse, 120; temperature, 102°·2. To have astringent mixture (chalk and catechu), and to be packed three times a day. Vesp.: temperature, 103°·8; after pack, 103°·2. To have chloral and bromide draught.

16th Oct.—Slept well after draught; bowels moved twice; stools passed in bed. This morning patient is disturbed and restless, cries out when touched. Temperature in morning, 103°·2; in evening, 104°.

17th Oct.—Restless night, slept very little, was noisy and delirious. Five loose and dark stools in last twenty-four hours; passes both stools and water in bed; nothing on skin. Pulse, 120; temperature, 103°. To have 20 minims liq. ferri pernit. every four hours. Hair to be cut close and ice bag applied to head. Vesp.: pulse, 120; temperature, 100°·6.

18th Oct.—Slept well without draught; two stools; no eruption. Pulse, 104; temperature, 100°·6. Vesp.: temperature, 101°·6.

19th Oct.—Slept well without draught; seems more himself, and recognised his mother for the first time; abdomen less tumid; bowels moved three times consciously. Pulse, 120, of better volume; temperature, 103°·2. To have astringent mixture only three times a day. Vesp.: pulse, 124; temperature, 103°·6.

20th Oct.—Slept well without draught; tongue cleaning. Pulse, 120; temperature, 102°·6. Vesp.: pulse, 116; temperature, 101°·2.

21st Oct.—Better altogether; has improved aspect; tongue cleaning. Temperature in morning, 99°; in evening, 98°·6.

22nd Oct.—Temperature in morning, 98°·6; in evening, 99°.

23rd Oct.—Temperature, 98°·4.

Made steady and satisfactory convalescence.

CASE XI.—A. C., aged 10, brother of last case, began to ail on the 4th November, his first complaint being of pain in head. Was admitted late on 9th November.

10th Nov. (7th day of illness.)—Looks bright and well; tongue clean and moist; bowels loose—stools pale coloured; pulse,

108; temperature, 103°·6. Vesp.: pulse, 112; temperature, 104°·6.

11th Nov.—Slept fairly, but wandered much in his sleep; has had five loose stools in last twenty-four hours; abdomen slightly tumid; extremities and point of nose feel cold; temperature, 104°·2; evening, 103°·6. To have 4 ounces of port wine.

12th Nov.—Bowels moved eight times in last twenty-four hours; abdomen tense and tumid; pulse, 120, feeble; temperature, 103°·6; no rash; to have 2 grains of acetate of lead every three hours. Vesp.: temperature, 105°.

13th Nov.—Restless night; three ochrey stools during night; has three petechial spots on abdomen, no other rash; temperature, 103°·6; vesp., 104°·6.

14th Nov. (11th of illness).—Six loose stools; tongue dry: temperature, 103°·4; vesp., 105°·2.

15th Nov.—Restless night; seven loose stools, two passed in bed; pulse, 120; temperature, 103°·2. Omit acetate of lead; to have 3ss. of tincture of catechu every three hours. Vesp.: bowels moved once since morning; patient has been very restless all day; eyes staring; add 5 min. tr. opii. to each dose of catechu.

16th Nov.—No stool since 9 P.M.; slept well till 5 A.M.; moans, and is delirious; has depressed and almost livid aspect; hands twitching, and lower lips quivering; petechial spots on abdomen continue, another has appeared on the buttock; tongue dry; sordes on teeth; pulse, 120; temperature, 103°·2. Vesp.: temperature, 104°·6.

17th Nov.—Slept for two hours; restless while awake; seven loose stools; temperature, 103°·6; vesp., 103°·2.

18th Nov.—Better night; three loose stools; asked for lemonade; temperature 101°·6; vesp., 102°·4.

19th Nov. (16th of illness).—Good night; three stools; abdomen less tumid; temperature, 102°·2; vesp., 102°·6.

20th Nov.—Slept well; no stool for twenty-four hours; temperature, 103°·4; omit astringent; vesp., temperature, 103°·6.

21st Nov.—One formed stool; temperature, 102°·4; vesp., 103°·2.

22nd Nov.—Got much worse during night; is pinched and sunken in aspect. Pulse, 176, scarcely perceptible; temperature, 101°·2. To have a dessert-spoonful of brandy every quarter of an hour. Gradually sank and died at 3.50 P.M.

Sectio forty-four hours after death. Petechial spots gone; post-mortem lividity of back and legs.

Chest normal.

Abdomen.—Liver, spleen, and kidneys normal; intestinal glands agminated and solitary, quite healthy in appearance.

Head.—On opening into the cavity of the arachnoid there flowed away a largely increased quantity of fluid; here and there, chiefly along the course of the vessels, were seen deposits of

lymph. The small vessels of the pia mater were injected and unusually distinct; this lymph effusion and the injection of the pia mater were noted only on the upper surface of the cerebrum, and more on the left than the right side. There was nothing abnormal at the base of the brain. The choroid plexus was normal, and only a slight increase of fluid in the ventricles. The cerebral substance was normal in appearance. There was a much greater than normal quantity of fluid in the spinal canal. In short, the only abnormalities were the increased quantity of cerebro-spinal fluid, the lymph effusion in the arachnoid, and the minute injection of the vessels of the pia mater.

These two cases illustrate the difficulties of diagnosis. During their whole course it was thought that they were both cases of typhoid; and not till the second proved fatal, and the true nature of the illness was demonstrated by post-mortem evidence, was it known that they were really cases of cerebro-spinal fever.

The rose spots noted in W. C.'s case wanted the lenticular outline of true typhoid spots, though no note was made of this fact till after the death of his brother.

CASE XII.—J. T., aged 21, a mechanic, came to hospital on 9th Dec. 1878. No satisfactory history could be got; but he seems to have been out of health for some weeks, complaining chiefly of general debility, accompanied by cough and swelling of the feet. Five days before admission he became suddenly worse; had rigors, headache, and increased debility, which compelled him to go to bed; on the following day he became delirious, and has been so more or less ever since.

9th Dec.—Vesp.: Patient moans incessantly, is barely sensible, and can give no account of self. Tongue dry; pulse, 102; temperature, 104°·6.

10th Dec.—Moaned nearly all night; tongue dry; pulse, 112; temperature, 102°; pupils equal and natural; slight bleeding from right ear; face covered with eruption of acne—this he always has. On trunk and arms is an eruption of isolated rose-red spots, not elevated, disappearing on pressure; urine drawn off by catheter, sp. gr. 1027; is deficient in chlorides, contains a considerable quantity of albumen, and deposits urates on standing. Evening temperature, 103°.

11th Dec.—Quiet night; slept a good deal; seems more sensible; tongue dry; pulse, 116, dichrotous; temperature, 101°·6; pupils natural; rash as yesterday; has some purulent discharge from right ear; bowels moved naturally; still requires the catheter. Evening temperature, 103°·2

12th Dec.—Quiet night; very abundant rose rash over trunk and upper extremities; pulse, 120, dichrotous; temperature, 99°·6; still requires the catheter. Evening temperature, 105°·6.

13th Dec.—Very restless night, moaning and screaming out at times; eyes suffused; pupils natural; urine passed in bed; rash as last noted; pulse very rapid and feeble; temperature, 101°; patient much sunk, extremities cold. To have an ounce of whisky every hour. Vesp.: much sunk; temperature, 102°; pulse cannot be counted.

14th Dec.—Sunk in bed; pulse barely perceptible; temperature, 103°·2; rash remains, but dingy in colour. He gradually sunk, and died at 9 P.M.

Post-mortem thirty-six hours after death.

Chest.—There were some old adhesions of left pleura; at the base of that lung there was an infarctus due to embolic plugging of a large vessel, the infarcted portion was wedge-shaped, the apex of the wedge pointing to the root of the lung, and involving the greater part of the lower lobe. A small infarctus was also found at the anterior part of the base of the right lung. The heart contained a firm pale clot in its right ventricle, entangled in the papillary muscles.

Abdomen.—Liver normal; spleen softer and rather larger than normal; kidneys darker than natural, but structurally sound. The ileum for 4 or 5 inches above the ileo-cæcal valve was congested, and had on its mucous surface several good-sized ulcers, which looked as if they had been punched out of the mucous surface; they were oval in shape, with their long diameter across the bowel; their edges were hard and not undermined. The ulcers were situate in the Peyers' patches, and were most marked in the last 2 inches of the ileum. The congestion of the bowel was not marked, and did not extend up for more than 4 to 5 inches; there was no appearance of sloughing, and the abdominal glands were not enlarged.

Brain.—There was a distinct increase in the quantity of cerebro-spinal fluid. The arachnoid covering the upper surface of the hemispheres, especially the left, was the seat of lymph deposit, most marked along the course of the veins, which were more than usually loaded. The base of the brain was quite healthy.

This is a very interesting case, the chief point of interest being the ulcerated condition of the ileum. During life he had the symptoms of cerebro-spinal fever with its characteristic rash well marked; and after death there was found the lesion of that disease. But in addition there was also found an ulcerated condition of that part of the bowel which suffers in typhoid fever; and a cursory examination might, on this evidence, have led to the conclusion that the patient had died of typhoid. More careful examination of the intestinal ulcers showed that they owned a different origin. Typhoid ulcers have ragged undermined edges, and their long diameter is up and down. In this case the ulcers had hard, clear defined edges, as if punched out of the bowel, and their long

diameter was transverse. The man died of cerebro-spinal fever ; but he happened also to have tubercular disease of the bowel, which not only accounted for his bad health before the onset of the fever, but handicapped him during it.

(To be continued.)

VI.—CLINICAL AND PATHOLOGICAL MEMORANDA.

By BYROM BRAMWELL, M.D., F.R.C.P. (Edin.), Assistant Physician to the Edinburgh Royal Infirmary ; Lecturer on the Principles and Practice of Medicine, and on Practical Medicine and Medical Diagnosis in the Extra-Academical School of Medicine, Edinburgh ; Additional Examiner in Clinical Medicine in the University of Edinburgh, etc.

VII.—*The "Half-clearing" Method of preparing Nerve Sections.*

AMONGST the many processes which are in use for displaying the minute structure of the brain and spinal cord, there is none which in my hands has yielded such beautiful results as the "half-clearing" method. The process as carried out by Professor D. J. Hamilton, from whom I first learned the method, is as follows:—The section of brain or spinal cord, which has been previously stained with an ammoniacal solution of carmine, washed first in water acidulated with acetic acid and then in pure water, is floated on to a slide and then treated with successive doses of methylated spirit (*not* absolute alcohol). The excess of spirit having been removed, partly by evaporation, partly by carefully drying the slide round the edges of the preparation, a small quantity of oil of cloves is allowed to flow rapidly through the section. *While the preparation is still slightly opaque*, the oil of cloves is, so far as possible, drained away by inclining the slide to one side ; and a small quantity of Canada balsam or gum dammar is dropped into the section, and the cover-glass placed in position.

The results which I have obtained in this way, though in many cases exceedingly beautiful, in fact perfect, are somewhat uncertain ; in some cases, the preparation is not sufficiently, while in others, it is unequally, irregularly, or too much clarified.

The uncertainty of the process, which is, I think, to some extent, due to the difficulty of determining the exact quantity of methylated spirit with which the preparation should be treated, can to a considerable extent be avoided. Instead of treating the section with alcohol while on the slide, it should be placed for some time in a basin of methylated spirit, from which, at the end of an hour or longer, it is floated on to the slide, treated with oil of cloves, and mounted in the usual manner. The proper method of applying the oil of cloves—which can only be acquired after some practice

and experience—is essential for success; slight staining with perosmic acid seems to favour the process; while the atmosphere of the laboratory in which the sections are being mounted must not be loaded with moisture. To get perfectly satisfactory results, the sections must be as thin as possible; and the greatest attention must be paid to all the minutiae of the process.

In successful preparations of "half-cleared-up" brain or spinal cord *all* the elements of the tissue (nerve fibres from the largest to the most minute, nerve cells with their processes, neuroglial cells and the finest neuroglial filaments, vessels, etc.) stand out with marvellous clearness of definition and brilliancy—a result which cannot be obtained by any other method with which I am acquainted; the extraordinary sharpness of outline and brilliancy of every minute detail of structure require to be seen in order to be appreciated. The disadvantage of the method—and it is a great one—is that the picture is not permanent; at the end of a few months the section becomes completely clarified, and all the beautiful, fine, sharp detail and definition disappear; the final result is then a completely cleared-up ammoniacal carmine preparation, a result which is inferior to that obtained by some other methods of preparation (borax carmine and logwood for nuclear staining; aniline, blue black, and especially Weigert's hæmatoxylin process for nerve processes, nerve tubes, etc.) As a *differential stain for tracing medullated nerve fibres*, Weigert's process is much superior to the "half-clearing-up" method which I am describing; it also has the immense advantage of being permanent.

The following illustrations (Figs. 21 to 27) which have been most carefully and laboriously copied by means of the camera lucida from a section of the cortex of the human brain, give some idea of the results which may be obtained by this method. The figures are, however, very imperfect representations of the original in this respect, that the finest nerve fibres and neuroglial filaments which are so wonderfully brought out by the "half-clearing-up" process are not reproduced. While, then, the illustrations are absolutely accurate and faithful representations as far as they go, the greatest pains having been taken to include every nerve cell with its processes, and every neuroglial corpuscle, in the narrow portion of the section shown in Figure 21, and claim to be an accurate representation of the "lamination" of the cerebral cortex at this particular part of the section, they only, as it were, represent the coarser points, all the finest details which are beyond my powers of draughtmanship, and probably only to be accurately represented by micro-photography, being omitted. Figures 25, 26, and 27 show the processes of the large multipolar (motor) nerve cells of the cortex in a more satisfactory manner than they are sometimes figured and described.



FIG. 21.—Camera Lucida Drawing of a Microscopical Section of a Motor Convolution of the Human Brain, showing the Exact Arrangement and Relative Size of the Nerve Cells, Cell-processes, and Connective Tissue Corpuscles in the different Layers (I., II., III., IV., and V.) of the Cerebral Cortex (Low power.—Harnack, oc. 8, obj. 8, and drawing reduced from $8\frac{1}{2}$ to $7\frac{1}{2}$ in.). Stained with *Picro-carmine*, half-cleared with *Methylated Spirit* and *Oil of Cloves*, and mounted in *Eylol*. *Baleism*. III. and IV. ought perhaps to be considered as one and the same layer.

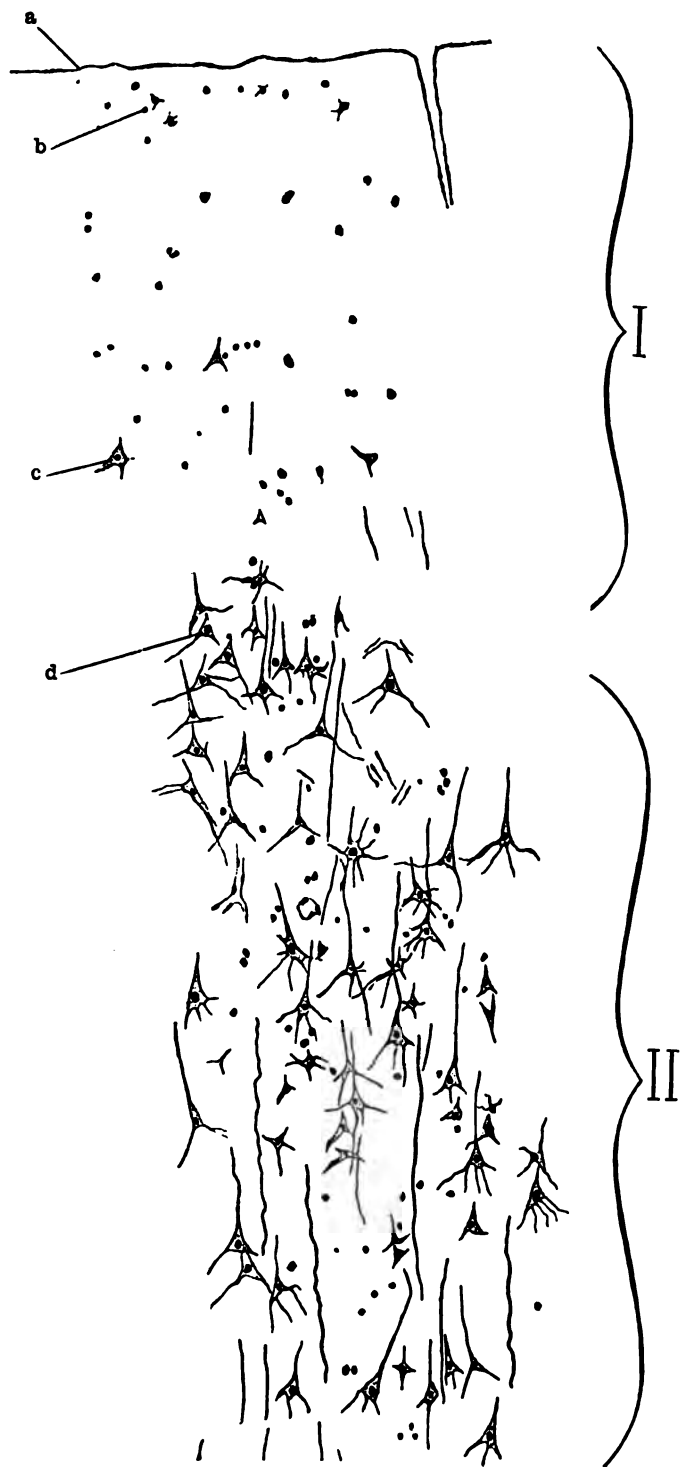


FIG. 22.—Camera Lucida Drawing of a Microscopical Section of a Motor Convolution of the Human Brain, showing the Arrangement of the Nerve Cells, Cell-processes, and Connective Tissue Corpuscles in the first and second layers. Stained with Picro-carmin, half-cleared with Methylated Spirit and Oil of Cloves, and mounted in Zylol Balsam (High power—Hartnack, oc. 3, obj. 8, and drawing reduced from 104 to 74 inches).

I., First layer; II., second layer; a, free surface of the convolution; b, connective tissue corpuscle in the superficial layer; c, small nerve cell at the bottom of the superficial or first layer; d, small nerve cells of the second layer.



FIG. 23.—Camera Lucida Drawing of a Microscopical Section of a Motor Convolution of the Human Brain, showing the Arrangement of the Nerve Cells, Cell-processes, and Connective Tissue Corporcles in the third, fourth, and part of the fifth layers. Stained with Picro carmine, half-cleared with Methylated Spirit and Oil of Cloves, and mounted in Eupyl. Bottom (High power)—Hastnach, sc. 3, obj. 8, and drawing reduced from 104 to 74 inches).
 e, Pyramidal nerve cells at the junction of the second and third layers; f, small nerve cells at the bottom of the third layer; g, large nerve cells of the fourth layer; g', basal or axis-cylinder process of one of the largest (giant) nerve cells of the fourth layer; h, small nerve cell at the junction of the fourth and fifth layers. III. and IV. ought perhaps to be considered as one and the same layer.

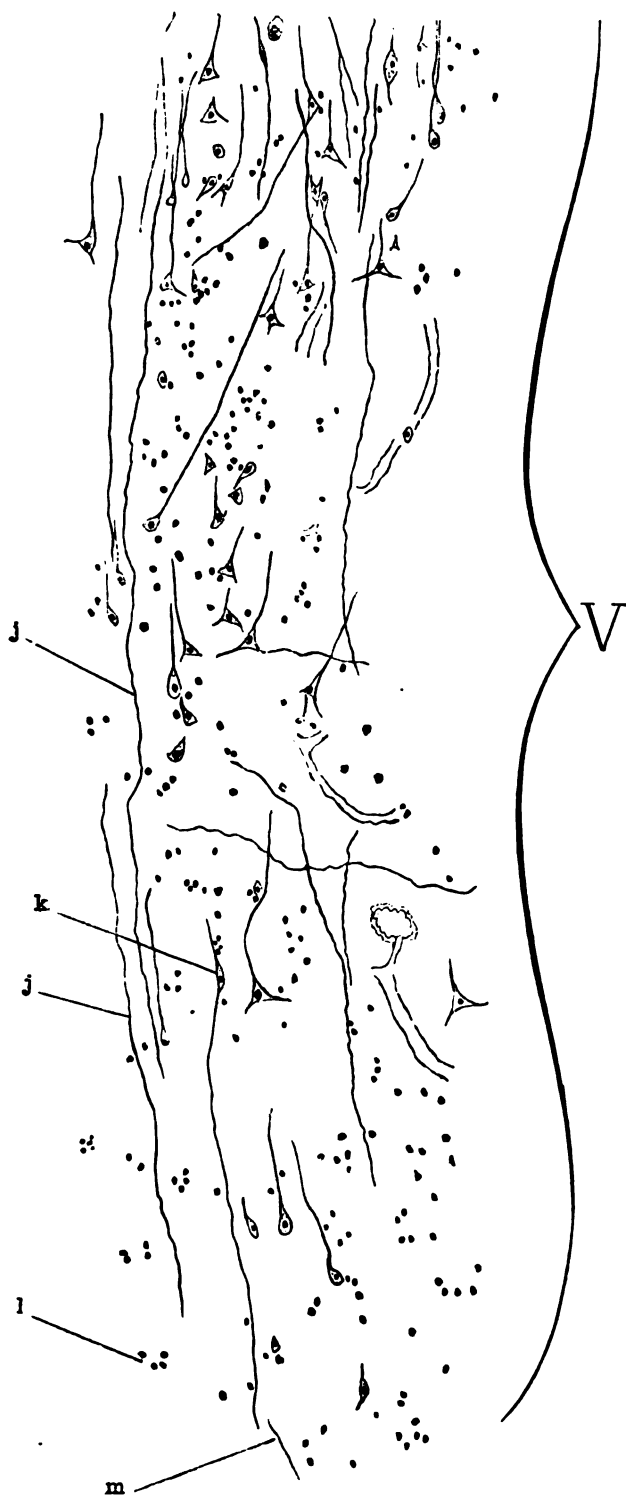


FIG. 24.—Camera Lucida Drawing of a Microscopical Section of a portion of a Motor Convolution of the Human Brain, showing the Arrangement of the Nerve Cells, Cell-processes, and Connective Tissue Corpuscles of the Fifth Layer. Stained with Ferro-carmum, half-cleared with Medicated Spirit and Oil of Cloves, and mounted in Zylol Balsam (High power—Hartnack, oc. 3, obj. 8, and drawing reduced from 104 to 74 inches).

The whole depth of the fifth layer is not represented, for the preparation was accidentally broken from 104 to 74 inches.

j, Long axis cylinder process, extending through several fields of the microscope, this and some of the other large nerve tubes are drawn a little too thin in this figure; *k*, small pyriform nerve cell at the bottom of the fifth layer, it is connected with the axis cylinder of a large nerve tube; *l*, connective tissue corpuscles; *m*, portion of a nerve tube at the bottom of the fifth layer.

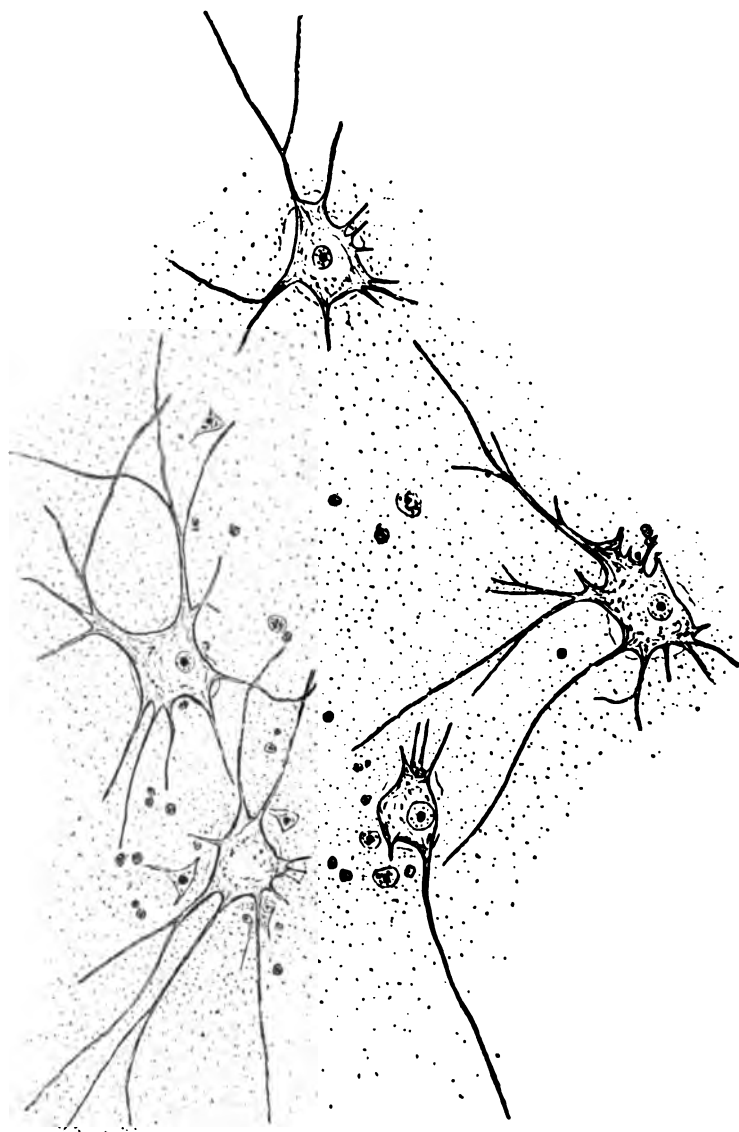


FIG. 26.—Camera Lucida Drawing of a Section through a Group of Large Nerve Cells in the Motor Area of the Human Cerebral Cortex, showing the Arrangement of the Cell Processes (High power—Hartnack, oc. 3, obj. 8, and drawing reduced from 7 to 6 inches). The Section is made at right angles to the long axis of the Cells. Stained with Picro-carmin, half-cleared with Methylated Spirit and Oil of Cloves, and mounted in Zylol Balsam.

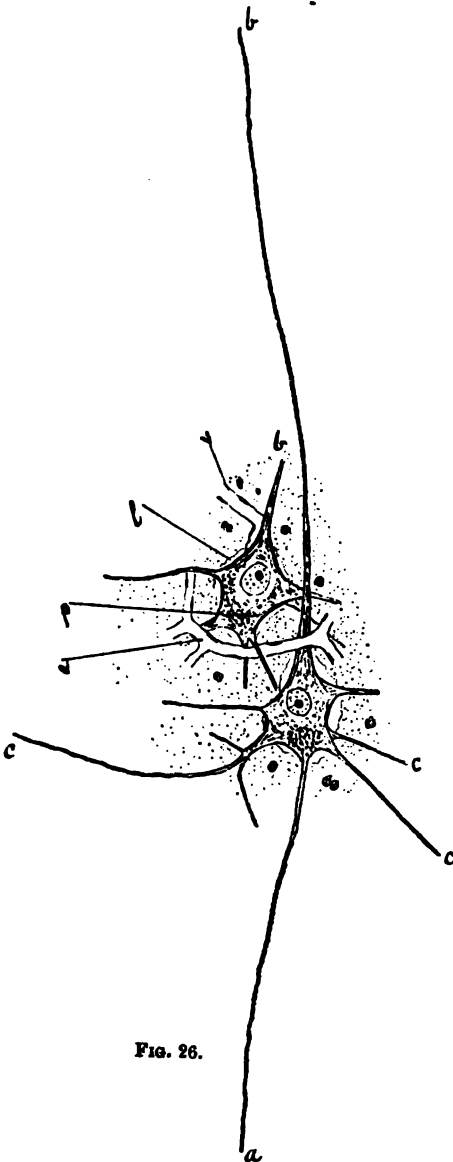


FIG. 26.

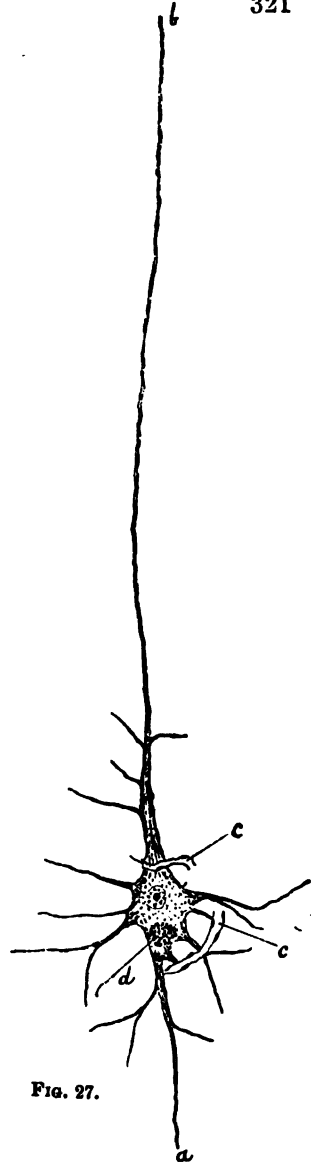


FIG. 27.

Camera Lucida Drawings of large Nerve Cells in the Motor Area of the Human Cerebral Cortex, showing the Arrangement of the Nerve Cells, Cell Processes, and Bloodvessels. The Section is made in the direction of the long axis of the Nerve Cells and of their axis cylinder processes. Stained with Fiero-carmin, half-cleared with Methylated Spirit and Oil of Cloves, and mounted in Zylol Balsam.

FIG. 26.—(High power—Hartnack, oc. 8, obj. 8 and drawing reduced from 7 to 6 inches). *a*, Basal or axis cylinder process; *b*, long process distinctly fibrillated passing in the direction of the surface of the convolution; *c, c*, some of the other processes of the cell; *l*, lymphatic space; *p*, mass of pigment granules; the nucleus and nucleolus are very distinct; *v, v*, capillary vessels.

FIG. 27.—(High power—Hartnack, oc. 8, obj. 8, and drawing reduced from 9 to 6 inches). *a*, Process passing from the base of the cell, in this case branched; *b*, process passing from the apex of the cell towards the free surface of the convolution; *c, c*, capillary vessels; *d*, mass of pigment granules.

In some future communications I propose to publish a series of drawings illustrative of some minute (microscopical) lesions in the brain; and as some of the preparations have been made by the method described above, it may not be out of place to briefly recapitulate here the different processes which the brain has to undergo before the perfectly "half-cleared-up" microscopical preparation is obtained.

Method of preparing "Half-cleared-up" Sections of Brain Tissue.

A. *Hardening*.—Portions of brain, measuring about $2 \times 1\frac{1}{2} \times 1\frac{1}{2}$ inches, are placed in a flat glass preparation or brain jar, and covered with an ample quantity of methylated spirit, care being taken that the individual pieces do not touch. At the end of 12 to 24 hours, each portion is turned so that its upper side is undermost. At the end of another 12 or 24 hours the portions of brain are cut into smaller pieces, about $1 \times \frac{3}{4} \times \frac{3}{4}$ inches, and are placed in a wide-necked glass bottle filled with Müller's fluid—the glass jars in which confectioners keep sweetmeats answer the purpose admirably. The quantity of Müller must be large in proportion to the number of pieces of brain. The Müller should be changed at the end of the first and again at the end of the third week.

B. *Saturation with Gum, Sugar, and Carbolic Solution*.—When the pieces of brain are sufficiently hard (usually in from 4 to 6 weeks), they should be transferred to a glass-stoppered bottle containing a mixture of gum, sugar, and carbolic acid.¹ This solution should be changed on the third day, and again if necessary (if the solution again becomes dark in colour, *i.e.*, if the pieces of brain still contain Müller's fluid).

C. *Freezing and Cutting*.—At the end of a week, or at any subsequent period,² a piece of brain is frozen and cut into a basin of water.

D. *Staining and Transferring to Spirit*.—The very finest sections should be floated on to a glass slide immediately after they are cut, and covered with the staining solution—an ammoniacal solution of carmine,³ or Ranvier's picro-carmine solution. If desired, the sections may, of course, be allowed to remain in the basin of water (covered with a plate so as to protect the sections from dust) for 12 to 48 hours before staining, a method of procedure

¹ The composition of the gum, sugar, and carbolic solution which I generally use is:—Of syrup (crystallized sugar, $\frac{1}{2}$ to $\frac{3}{4}$ oz. troy weight, dissolved by the aid of heat in 1 oz. of water); of mucilage (B.P. strength), equal parts; pure carbolic acid, 4 to 6 drops to the ounce.

² In some cases in which the brain is kept in the gum, sugar, carbolic solution for some time before being cut, crystals of sugar are deposited throughout the tissue. This is a very serious disadvantage. It may, I think, in many cases be prevented by reducing the quantity of sugar in the mixture to that recommended in the text ($\frac{1}{2}$ to $\frac{3}{4}$ oz. of sugar to 1 oz. of water).

³ Of best carmine, 3i.; liq. ammoniæ, 3i.; water to 5 ounces.

which should always be adopted if the sections are to be mounted in Farrant's solution. After the section is sufficiently stained, it should be washed first in water acidulated with glacial acetic acid (20 to 60 drops of acid to the pint basin of water), and then in pure water. It should then be transferred to a glass slide and treated for a few seconds (10 to 30) with a drop or two of dilute perosmic acid ($\frac{1}{4}$ per cent.); then transferred to pure water, in which it should be allowed to remain for a short time (5 to 10 minutes); and then transferred to a basin filled with methylated spirit. An ordinary after-dinner glass finger bowl, the rim of which is ground flat, so as to permit of its being accurately covered and made air-tight when covered with a glass plate, answers the purpose well. It is better if possible to allow the section to float on the surface rather than become completely immersed in the spirit.

E. Clearing with Oil of Cloves and Mounting.—After the section has been in the spirit for a short time, say from a quarter to half an hour, it is ready for clearing with oil of cloves and mounting. If desirable, however, the sections may remain in the spirit for a much longer time—days, or even weeks. It must, however, be remembered that if the sections are allowed to remain in the spirit the carmine staining becomes diffused. This is of little consequence so far as the “half-clearing-up” process is concerned, for “half-cleared-up” preparations owe their beauty to the sharpness of outline of the individual constituents of the tissue rather than to the staining of axis-cylinders, nuclei, etc.; indeed, half-cleared-up preparations may be made without staining in carmine at all. Diffusion of the stain renders the preparation worthless as a permanent object after it has been completely clarified—a matter, perhaps, of comparatively little importance, for, if a good carmine stain is required, borax carmine yields much better permanent transparent preparations than the ammoniacal carmine solution.

The section is now transferred from the basin of spirit on to the centre of a glass slide.¹ The excess of alcohol is allowed to flow off the section, the slide being inclined to one side to facilitate drainage; the slide round the margins of the section is then quickly but carefully dried with the finger or a piece of fine cambric; and while the section is still moist a small quantity of oil of cloves is dropped on to the slide at one side of the section; the slide is then inclined to the opposite side, and the oil of cloves allowed to flow *under* all parts of the section, the preparation being supported, if necessary, by the

¹ In transferring the preparation from basin to basin the section should never be lifted, but always floated off or on to the glass slide into the liquid. In transferring sections from a basin of fluid to a glass slide the section should be gently guided into proper position (pushed from the far side) by a camel's hair pencil rather than by a needle, which does well enough for tougher tissues, but is apt to injure very delicate sections of brain or spinal cord.

point of a needle placed against the edge opposite to that from which the oil of cloves is flowing (the section may, of course, be held in position by the needle being placed through it at the side from which the oil of cloves is running; but this I find is more likely to produce tearing in the case of very delicate tissues, such as thin sections of brain and cord). The clove oil should then be thoroughly drained away from the lower margin of the section, and while it is still slightly opaque a drop or two of balsam (I now always use zylol balsam) should be placed on the section, and the cover-glass placed in position.

It is desirable to use as small a quantity of oil of cloves as possible, but the clove oil must come in contact with the whole of the under surface of the preparation. The clearing process should be allowed to go on until the preparation is all but transparent; portions of the section which appear to be completely cleared up will often show a slight iridescent opacity after the clove oil has been completely drained away and when the preparation is held up to the light. This is the most perfect attainable result.

The "half-clearing-up" method is not suited for the detection of micro-organisms, but the following process yields admirable results:—

VIII.—*Process for the Detection of Micro-organisms in Nerve Tissues.*

For the recognition of micro-organisms in large sections of delicate and fragile tissues, such as brain and spleen, the following modification of Gram's method, which I have described in the *International Journal of the Medical Sciences*,¹ will, I think, be found an improvement. It enables the section to be manipulated with freedom, and prevents the tearing and breaking of the tissue, which in my hands so frequently occurs in the process of transferring large and delicate sections from the "lifter" and spreading them out on the slide preparatory to mounting. It also enables one to regulate with greater precision and accuracy than is, I think, possible by the ordinary Gram's method, the washing out of the colouring matter from the tissue by the absolute alcohol and oil of cloves respectively; finally, it has yielded in my hands more permanent preparations than the ordinary method.

The process is as follows:—The section having been stained with methyl violet; washed for a few seconds in distilled water; immersed for two or three minutes in a solution of iodine and iodide of potassium; and again washed in distilled water, as in the ordinary Gram's method; is placed in absolute alcohol until the greater part of the colouring matter is washed out, but the decolorization should not be carried so far as in the ordinary method; the section is then placed for a minute or

¹ *The International Journal of the Medical Sciences*, July 1886, page 24.

two in a solution of eosine. *All of these steps in the process may be—and are, I think, in the case of very delicate sections best—carried out on the slide, the different solutions being dropped on to the preparation by means of a pipette.* The section is then either washed on the slide with distilled water, or it may be transferred to a basin of distilled water, where it may remain without much risk of injury for an hour or two if required. This is often a great convenience to the operator. The section is then floated on to a glass slide, and treated while on the slide with successive doses of absolute alcohol, until it is completely dehydrated and sufficiently decolorized. In the case of very thin sections, which have been already pretty well decolorized, one or two doses of absolute alcohol dropped from a bottle on the slide and allowed to flow over the specimen are usually sufficient. The excess of alcohol is removed from the section; and it is treated with oil of cloves, in the manner described above. When the preparation is *thoroughly cleared*—it must be perfectly transparent—the oil of cloves is thoroughly drained away, one or two large drops of zylol balsam are placed on the section, the amount of balsam being, of course, varied with the size of the section, and the covered glass is placed in position. To insure permanency, each step in the process must be *thoroughly* carried out—the water in the section must be completely removed by the absolute alcohol—the alcohol must be thoroughly removed by the oil of cloves. If the section is not quite transparent after being treated with oil of cloves, it must be again treated with alcohol, and again cleared. The oil of cloves must be drained away as completely as possible, and the amount of zylol balsam must be more than is required for the mere mounting of the preparation, in order that any oil of cloves, which may still remain in the section, may be completely driven out from it.

After mounting, the preparation should be placed aside on a flat surface, any balsam which exudes being absorbed by small pieces of blotting-paper placed round the margins of the cover glass. After a day or two, a small weight may be placed on the cover glass; but if this is done, care must be taken that the weight is not so heavy as to squeeze out or destroy the continuity of the section. Heavier weights may from time to time be substituted; the excess of balsam is in this way gradually removed, and a preparation finally obtained which is quite flat and free from wrinkles, and the whole of which can be examined with high magnifying powers.

VII.—THE BRONCHIAL CATARRH OF CHILDREN.

By JAMES CARMICHAEL, M.D., F.R.C.P. Ed., Physician to the Royal Hospital for Sick Children, Edinburgh University Clinical Lecturer on Disease in Children.

THE liability of children to catarrhal complaints is one of the leading characteristics of disease in early life. The bronchial catarrhal affections stand out prominently in this country as among the commonest and most fatal of the diseases we meet with in pediatric practice. Healthy children are liable to be thus affected under a variety of circumstances, still more so are those debilitated from whatever cause, either acute disease or constitutional depravity. In rachitic children particularly such ailments are frequently met with, and are apt to become intractable and dangerous.

I purpose giving a short sketch of the clinical features and complications of bronchial catarrh in children, and offering a few remarks on the general management and therapeutic treatment of the various conditions. In doing so, I limit my observations chiefly to acute primary or idiopathic bronchial catarrh occurring during the dentitional or predentitional periods of infant life. It is at these epochs that we meet with the peculiarities which distinguish the disease at this time from that occurring in childhood or adult life, and which invest it with such special interest and importance. It is well known that in the extremes of life there is a greater liability to bronchitis than there is in the adult or middle period. The hypersensitiveness and activity of the mucous surfaces in children render them specially liable to such affections, doubtless in obedience to the law of evolution of disease, which holds that organs and tissues are prone to disease in direct proportion to their normal or physiological activity. In healthy children we are fairly entitled to say that there is relatively a greater proneness to the production of such diseases than in adults. In the case of children debilitated from various causes there is even a more marked predisposition to such affections.

Among the causes which tend to produce bronchial catarrh, *climatic influences*, in this country, stand out prominently. Frequent and sudden changes of temperature, and cold and damp winds, must be credited largely in their causation. After epidemics of hooping-cough or measles there is a special disposition to pulmonary and bronchial attacks, especially during winter and spring.

Anti-hygienic conditions likewise play a not unimportant part in this connexion, by lowering the tone of the system and depressing the vital powers, thereby diminishing the ability of the child to resist the exciting causes of the disease. Associated with these, the next cause deserving of note is *deficient or improper clothing*. This, no

doubt, operates in a large number of cases, and although it is chiefly among the poorer classes, mothers in better circumstances are not altogether free from blame in this respect. It has always appeared to me a barbarous custom that infants should be dangled about with bare arms, and after they are short-coated with bare legs also. Nothing can be said in favour of the custom, except that it has been to a great extent the fashion, and that it panders to the vanity of mothers who are proud of displaying the natural beauty of their children. Surely common-sense would dictate that infants are at least as liable, we believe more so, than adults to catch cold by having their extremities exposed. During the *dentitional period* children appear to be specially prone to catarrhal attacks. At this time the physiological activity of the process is concentrated in the buccal cavity, and with this the gastro-intestinal and bronchial mucous membranes show a close sympathy. One of the most frequent conditions with which bronchitis is associated is *rachitis*. Here the defective state of nutrition of the body generally and lowered nerve tone are important elements no doubt, in causation, and if, in addition, we have softening and deformity of the bony walls of the chest, all the conditions are present which interfere seriously with the physiological activity of the lungs, inducing more or less blood stasis and passive congestion, along with which is sooner or later associated a more or less chronic catarrhal condition of the bronchi, and often pulmonary collapse.

The clinical features of bronchial catarrh in the child necessarily vary according to its previous condition, and the extent to which the bronchial tubes become involved. The disease often begins, as in the adult, with a coryza, and spreads by continuity of surface to the tracheo-bronchial mucous membrane. As a rule, the symptoms of bronchitis are better marked or more acute in a previously healthy child than in a cachectic one, in whom the complaint is often of a sub-acute and insidious character. In acute cases cough is generally a prominent symptom. At first hard and dry, it soon becomes loose, as the secretion from the inflamed bronchi is established. The child does not perhaps otherwise show signs of illness. There may, however, be only a slight cough, and even no rise of temperature. The child may be lively and happy with its playthings, and the disease go on unheeded till the medium-sized and smaller tubes are affected, when the symptoms all become aggravated. It is in these circumstances that the practitioner is generally called in to see the child. The physical signs in the slighter forms of the disease are generally limited to a somewhat harsh vesicular respiratory murmur, accompanied by a few sibilant rhonchi heard chiefly in the inter-scapular region. The temperature seldom rises much above normal; the pulse and respirations are only slightly, if at all, accelerated. Very different are the symptoms and physical signs when the bronchial tubes are more extensively involved. Then we have all the features of bronchial



FIG. 23.—*Camera Lucida Drawing of a Microscopical Section of a portion of a Motor Convolution of the Human Brain, showing the Arrangement of the Nerve Cells, Cell-processes, and Connective Tissue Corpuscles in the third, fourth, and part of the fifth layers. Stained with Picrocarmine, half-cleared with Methylated Spirit and Oil of Clove, and mounted in Eupiat Balsam (High power—Hastings, oc. 3, obj. 8, and drawing reduced from 10 $\times$ to 7 $\frac{1}{2}$ inches).*
 c, Pyramidal nerve cells at the junction of the second and third layers; f, small nerve cells at the bottom of the third layer; g, large nerve cells of the fourth layer; g', basal or axis-cylinder process of one of the largest (giant) nerve cells of the fourth layer; h, small nerve cell at the junction of the fourth and fifth layers. III. and IV. ought perhaps to be considered as one and the same layer.

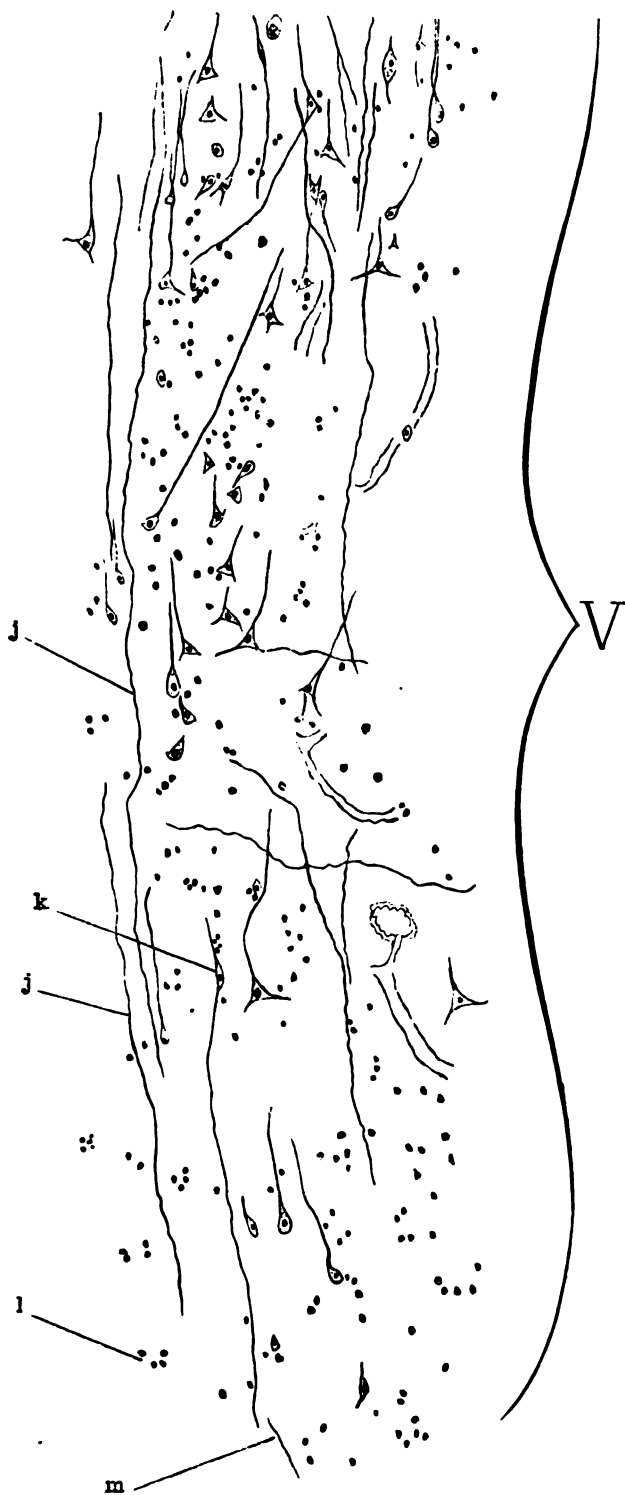


FIG. 24.—Camera Lucida Drawing of a Microscopical Section of a portion of a Motor Convolution of the Human Brain, showing the Arrangement of the Nerve Cells, Cell-processes, and Connective Tissue Corpuscles of the Fifth Layer. Stained with Ferro-carmin, fast-cleared with Methylated Spirit and Oil of Cloves, and mounted in Zylol Balsam (High power—Hartnack, oc. 3, obj. 8, and drawing reduced from 10 μ to 1 μ inches).

The whole depth of the fifth layer is not represented, for the preparation was accidentally broken off the microscope, this and some of the other large nerve tubes are drawn a little too thin in this figure; *k*, small pyriform nerve cell at the bottom of the fifth layer, it is connected with the axis cylinder of a large nerve tube; *l*, connective tissue corpuscles; *m*, portion of a nerve tube at the bottom of the fifth layer.

whatever cause the abdomen is distended, we have, as a natural result, an obstacle to the free descent of the diaphragm, and con-



FIG. 2.—Bronchitis; Pulmonary Collapse; Catarrhal Pneumonia in a child 14 months old. Low temperature range indicates period of collapse.

sequent weakening of the inspiratory act, which acts directly in the production of collapse. Nasal or laryngeal or tracheal, as well as bronchial stenosis, from whatever cause, will likewise tend to produce it. Thus, in croupous or diphtheritic laryngitis, or laryngismus stridulus, we meet with it. Before alluding to causes in the bronchial tubes themselves, I wish merely to refer in passing to the question, which the limits of the paper forbid my discussing, how far any or all of these causes may operate in the production of collapse without the concomitant existence of bronchial

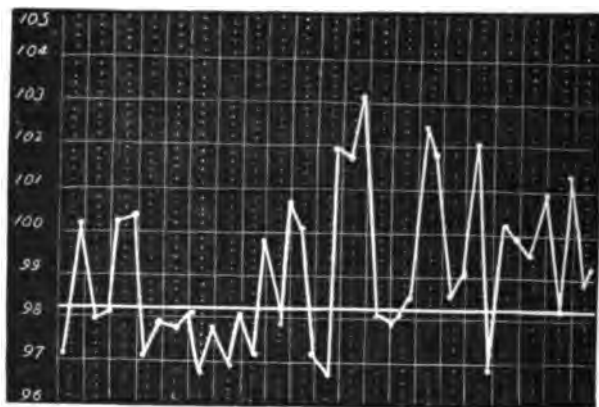


FIG. 3.—H. M., *et. 2*; Acute Bronchitis; Collapse; Catarrhal Pneumonia; Death.

catarrh. There are grounds for believing that in atrophied and debilitated children, with rickety deformity of the chest, atelectasis

may be gradually and slowly produced by physical causes apart from any intra-bronchial plugging or occlusion. There can be no doubt, however, that in the larger proportion of cases bronchial catarrh pre-exists, and, as a result, gradual blocking of the tubes with secretion directly causes collapse. The pathology of "plugging" of the tubes, as it is called, has been carefully worked out ever since Lænnec opened up the subject in his classical writings. I need only mention the names of Hutchinson, and of Gairdner,¹ who, in his excellent monograph—a model of exact clinical and pathological observation—has clearly shown the mechanism of its production. The old views of Lænnec regarding the relatively weaker power of the expiratory, as compared with the inspiratory act, have been disproved by almost all observers since his time. Hutchinson and Mendelsohn² prove conclusively that the forced expiratory act is one-third more powerful than the inspiratory act. This fact, as proved also by Gairdner and Traube, is one of the most powerful factors in the production of pulmonary collapse, especially when the bronchial tubes are obstructed by secretion. The "plug" theory of Gairdner has been abundantly proved, and presupposes the existence of viscid mucus plugging up the tube at a particular part. There can be no doubt that when we have viscid or partially solidified secretion occluding a tube of greater or lesser dimensions, the mechanical effect is such, that during the coughing and respiratory acts, the mucus acting in a valvular manner allows more readily the exit than the entrance of air into the alveoli, which ultimately become atelectic. Judging from a large number of cases of pulmonary collapse in children in which I have examined the bronchial tubes, they have been almost invariably filled with fluid mucus of a more or less viscid nature, so I am inclined to think, that, in children at all events, the consistency of the mucus is generally fluid, seldom inspissated to such an extent as to form the more or less solid plug graphically described by Gairdner, and that collapse takes place from a slow damming up of the tubes, the air being gradually forced out by the relatively stronger expiratory power, or the entrance of air prevented, in which case that contained in the alveoli is gradually absorbed,—a result which, we know from the observations of Fuchs, is almost certain to be brought about. The secretions in the bronchial catarrh of children are generally believed to be relatively more copious and fluid than in adults. Whatever be their condition, the same result obtains with probably equal facility.

The only other cause of pulmonary collapse to which I shall allude, is the probability of the temporary occlusion, partial or complete, of the smaller bronchial ramifications by spasmodic contraction. Lænnec, and after him Trousseau, and most other writers on the subject, have alluded to this. Trousseau, in proof

¹ *Pathological Anatomy of Bronchitis.*

² Reid, *Resp. Cyclopd. Anat. Phys.*, Part 32, p. 336.

of the existence of this contraction, has found therapeutically that belladonna, from its well-known action on the vagus in lessening vascular congestion of the mucous surface, diminishing secretion, and relieving spasm, is a most efficient drug in treating such cases. In young children, especially those in previously good health, and in whom reflex nerve action is excited with great readiness, it seems probable that this is not an unimportant factor in the production of pulmonary collapse, especially the slighter form of the complication. In fact, it is difficult to account for its production except on some such theory in the slighter forms of the disease, when there are no signs of any secretion in the tubes. The exact conditions and relations of the bronchial muscles in acute catarrhal conditions require elucidation. One cannot doubt that reflex spasm, as is generally supposed, must seriously affect the ingress and egress of air. A further development of the spasm, ending in more or less paralysis of the muscular wall, especially if accompanied by swelling of the mucous membrane, would tend to produce the same effects.

In a paper read to this Society lately by Dr M'Bride,¹ he alluded to the recent interesting observations of Huck on the erectile tissue of the inferior turbinated bodies in the nose. Stenosis of the nares in young children often plays an important part in the production of pulmonary collapse. Nasal catarrh is of common occurrence in infants, and is directly dangerous in proportion to the rapidity and completeness of the occlusion. It is still a debated point whether erectile tissue exists in the bronchial mucous membrane. If it does, there can be little doubt that it would readily account for the rapid closure of the tubes which occurs in the slighter forms of bronchial catarrh in comparatively healthy children.

I have said enough regarding the etiology of this condition to show that the causes are various and often complex. The importance of a thorough appreciation of these is obviously necessary in view of any rational treatment of the disease. What, then, are the clinical features of these cases? How do we recognise it during life? From what has already been said, it will be obvious that we meet with varying degrees of pulmonary collapse, from atelectasis of a limited number of lobules (lobular collapse) to that of larger portions of lung (lobar collapse). As would naturally be expected, the symptoms vary much in intensity according to the extent of lung involved, and the pathological conditions otherwise accompanying it. The clinical recognition of this complication is usually easy in direct proportion to the amount of lung involved, and the rapidity with which the collapse takes place. In those cases in which it is slowly and gradually induced, we do not meet with those well-marked symptoms which obtain when the child is *suddenly* deprived of the use of a large portion of lung. The cases can readily be divided into two classes:—

¹ *Medico-Chirurgical Transactions*, vol. iii.

A slighter form, occurring often in otherwise healthy children suffering from mild bronchial catarrh. In such cases the symptoms and signs are often comparatively neither serious nor pronounced, and may frequently be overlooked or misinterpreted. When recognised and suitably treated, inflation of the collapsed lobules takes place and the child recovers. Perhaps I can best illustrate the clinical features of the slighter form of pulmonary collapse by referring to one or two cases in point.

In December last year I was asked to see, in consultation with a medical practitioner, a bottle baby about four months old. The child had been ill for a week with slight symptoms of bronchial catarrh, the older children in the house all having had cold about the same time. The baby had previously presented no serious symptoms except slight sneezing and cough, with restlessness and intermittent suckling, and no constitutional disturbance otherwise. The night before I was asked to see the infant it had turned suddenly worse, becoming heavy and drowsy, refusing the bottle, the breathing being somewhat accelerated. On examination I found the child breathing 80 per minute; pulse, 130; temperature, 99°; anterior fontanelle somewhat depressed; superficial veins of head and anterior part of thorax prominent. On inspection of the chest, there was little movement and no indrawing of the ribs during inspiration at any part, the respiratory movement being chiefly abdominal. On auscultation the breathing was loud and freely audible all over the chest, and accompanied by occasional and scattered sibilant sounds, except over a limited space about 1½ inch square on the right side posteriorly near the base, where the breathing was faint and feeble, and the percussion resonance slightly impaired. I ordered the infant, as it had ceased to take its bottle, to have a tablespoonful of sac whey every hour and a half, for which it was to be wakened out of sleep, and, if possible, made to cry; sudden cold applications, if necessary, to the chest; to lie on the sound side; and a light cotton wool jacket to envelope the chest, and the flannel binder to be removed from the belly; ℥v. of sp. ammon. arom., with ℥j. of sp. chloroform, to be given every two hours alternately with the food. In two days the child had resumed its natural appearance and begun to take the bottle, the breathing became louder and stronger over the affected part, and a few fine crackling râles could now be heard, which soon disappeared.

A second case was that of a little girl one year old, who had been suffering from slight bronchial catarrh for about ten days. She appeared to be going on favourably, but on the tenth day I was sent for to see her, and found the breathing much accelerated. Previously the respirations had been hardly above normal, but now they numbered 68 per minute, the pulse being 130, temperature 99°·2. Examination of the chest showed scattered sibilant rhonchi, with occasional crackling in the inter-

scapular region and towards the bases of both lungs. The respiration was exaggerated at parts, and generally of unequal intensity, but no definite localized signs of pulmonary collapse could be detected. The existence of lobular collapse was, however, diagnosed as probable, and the further progress of the case corroborated this. The chest had been previously covered with a cotton wool jacket. A liniment of ammonia and camphor was ordered to be applied. She was given two ounces of milk, with a few drops of brandy and six drops of tr. belladonna, every three hours, for which purpose she was to be roused from sleep if necessary. In four days the aggravation of symptoms had disappeared, the respirations coming down to 40. The only alteration in physical signs was the occurrence of copious crepitant râles over a limited area towards the base of the right lung posteriorly. She got rapidly well. Such cases as these are not unfrequently met with. Many may be diagnosed with certainty from the occurrence of well-marked physical signs along with the usual symptoms. In others the physical signs are either absent or at first indistinct, yet the general features and termination of the case leave little doubt as to the existence of limited pulmonary collapse. The danger in all such cases, especially if they are unrecognised and not treated, is the occurrence of catarrhal pneumonia in the collapsed patches.

The second and more serious form of pulmonary collapse is met with in the severer forms of bronchial catarrh, in which the collapse is generally more extensive, and the symptoms and ultimate result of the complication much more serious. In such cases the reinflation of the collapsed lobules is the exception and not the rule. In capillary bronchitis in young children this complication is of great frequency, and generally leads on to catarrhal pneumonia. So common is its occurrence, that I believe you rarely meet with cases in which the ultimate bronchial ramifications are involved in an infant without the existence of collapse to a greater or less extent. It may be very limited, and, as in the milder form of catarrh, affect a few scattered lobules, or it may involve large portions of lung substance. In the former case the symptoms are less prominent, and physical signs are usually absent; in the latter the condition gives rise to well-marked symptoms, and frequently the physical signs are distinct.

The symptoms of extensive pulmonary collapse are prominent *in proportion to the rapidity with which the collapse takes place*. In cases where the air is slowly expelled from the lobules, by gradual occlusion of the smaller tubes, there are often no marked symptoms; on the other hand, when, from whatever cause, the collapse is sudden, as when a large bronchus becomes plugged, the symptoms present a more marked character and admit of easy recognition. In such cases, what are the clinical features of the disease? In a case of extensive bronchitis, when rapid lobar collapse takes place, there is usually a marked change in the symp-

toms. The child becomes greatly distressed, often more restless; the countenance is anxious, the lips livid, the *alæ nasi* move actively; the respirations become more hurried and shallow, frequently as high as 70 to 80 per minute; the pulse is small and compressible. The pulse respiration ratio is markedly perverted. The temperature does not, as a rule, show a corresponding rise; in some cases there may be a fall. The cough becomes markedly altered in character and frequency, is sometimes almost suppressed; at all events, it loses its harsh bronchial character, and becomes much more feeble and shorter. The child generally refuses food; if at the breast it stops sucking altogether. Along with these symptoms the physical signs become altered. During inspiration there is more or less indrawing of the ribs and intercostal spaces over the lateral aspect of the chest on one or both sides. There is high pitched percussion resonance, often well-marked dullness over the base of one or both lungs, or along the line of the spine. The percussion dullness is, however, often masked by the emphysematous lung around the collapsed portion, so that we sometimes get a hyper-resonant note rather than a dull one. On auscultation the breathing is shallow and feeble, and generally of a faintly bronchial character. There are usually no respiratory accompaniments at first, other than those previously audible, but in the course of a day or two fine crepitant râles may be heard from the congested lung substance in and around the collapsed portion. In the further progress of such cases, one of three things is likely to happen. As I have already said, in lobar collapse in severe bronchial catarrh reinflation rarely takes place to any extent. The collapsed portion may remain *in statu quo*, the child may die suddenly, or catarrhal pneumonia may be set up.

I now pass on to the consideration of acute catarrhal pneumonia. No more interesting class of cases is met with in the clinical study of disease in children than these. They are of interest, not only from their frequency, but on account of the variation of the symptoms, and the inconstancy of the physical signs as compared with similar conditions met with at later periods of life. No one who has not given close attention to the clinical features of these cases in early life would believe how variable and rapidly changing are the physical signs of pneumonia in the child. Well-marked signs of consolidation may be present one day, which from alteration in the physical conditions, due perhaps to emphysema or collapse, may be quite changed in a few hours. In children, without doubt, we meet with a true fibrinous pneumonia as well as the catarrhal form of the disease, with symptoms and physical signs so distinct as to leave no doubt as to its exact nature, but there is a large class of cases where, clinically, the line is by no means easily drawn between the two diseases. The old distinctions between lobar and lobular pneumonia are of comparatively little value in the child, as we meet with cases of lobar catarrhal pneumonia which at first sight, at all events,

are not so readily distinguished from the croupous variety of the disease. All observers are agreed that the acute catarrhal pneumonia of childhood is essentially a disease of early life. What, then,

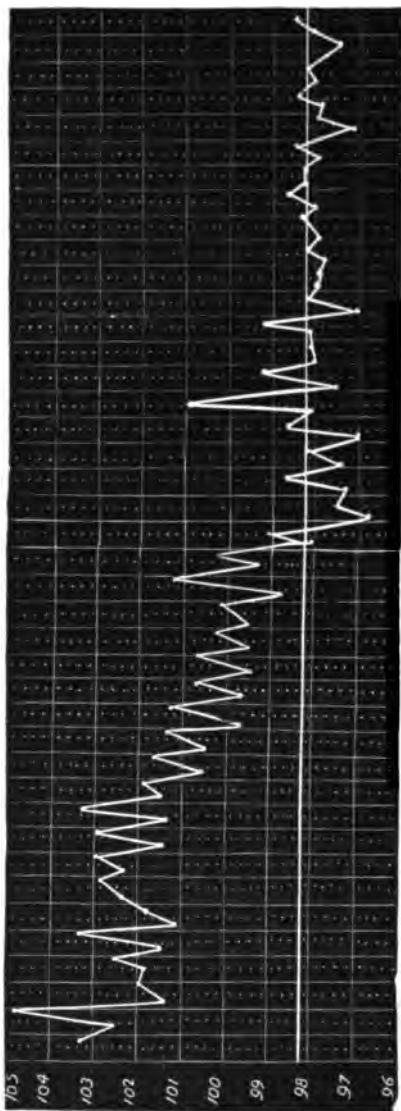


FIG. 4.—J. D., *et. 7*; Acute Catarrhal Pneumonia; Recovery.

are its distinguishing characters? The first fact to lay hold of is, that it is a secondary disease, closely associated with, generally complicating, bronchial catarrh. It occurs during the progress of this disease

especially when the ultimate bronchial ramifications are involved. Clinically it is difficult, often well-nigh impossible, to distinguish between capillary bronchitis and acute catarrhal pneumonia. Probably capillary bronchitis rarely occurs in a young child uncomplicated by catarrhal pneumonia. The recognition of the occurrence of this complication, as a rule, presents few difficulties. The previous existence of bronchial catarrh itself, if extensive, affords strong presumption of its occurrence. The diagnosis may be assured by a consideration of the general clinical features of the case, more particularly as regards symptoms, physical signs at the commencement, and when the disease is limited in extent, and possibly confined to a central portion of lung, being often indistinct in their character. When larger portions of lung are involved the physical signs are well marked, and give clear indication of the true nature of the complication.

(To be continued.)

Part Second.

REVIEWS.

Contributions to the Physiology and Pathology of the Breast and its Lymphatic Glands. By CHARLES CREIGHTON, M.D., formerly Demonstrator of Anatomy in the University of Cambridge. With Illustrations. Second Edition. 8vo, pp. 222. London: H. K. Lewis, 136 Gower Street, W.C: 1886.

HOWEVER much or however little one may agree with Dr Creighton's conclusions, it is impossible to read his work without being stimulated by his thought to a fresh study of the problems he discusses. We have in this book an important contribution to the simultaneous study of Anatomy, Physiology, and Pathology, and a clear demonstration of how each of these may be made to throw light upon the other. From a quiescent state the mamma is traced to its fully active condition—"evolution;" and back again, after lactation is over—"involution." The structure and function are shown to alter step by step each way, and a good case is made for the author's view that during the process of alteration a number of intermediate cell forms are thrown off as waste, removed chiefly by the lymphatic ducts, and modelled down in the glands.

On this process the author bases his view of the origin of cancer of the mamma, *i.e.*, that it is a perversion of the state where intermediate cell forms are thrown off. When the cells are multiplied in excess, they are crowded into the connective tissue spaces, and so made to assume an alveolar form. When the cancerous growth has fairly begun, it passes on its proliferating power from the gland

cells to the connective tissue corpuscles, and the two kinds afterwards unite in forming the cells of the cancer. This latter proposition is made more easily acceptable by the author's view of the development of the mammary gland, if it be correct. After a study of the development of the mamma in the guinea-pig he concludes, "The mammary gland would therefore be a further specialization of fat tissue, and a product of the mesoblast." In the present state of our knowledge it would seem premature to dogmatize on the subject either way. Dr Creighton himself suggests rather than asserts; but we must ask ourselves the question, Will this view of alveolar cancer, modified to a certain extent for other glands, hold good for allied forms of cancer in other parts? In other words, in the various seats of alveolar cancer uniformity seems more marked in the structure of the tumour than in the anatomy and physiology of the part in which it occurs, Can a perversion of the physiology account for the tumour structure in other parts as satisfactorily as in the mammary gland? If it can, then a great general law is laid down for us; but if it cannot, the denial can only be given after an extensive and interesting inquiry, in the course of which new light may be thrown on the parts themselves and some wider law laid bare. As to the actual form of the cancer, if the spreading margin is characterized by inflammatory proliferation of connective tissue, does this not lessen the tendency to alveolar arrangement between the connective tissue bundles? Moreover, it does seem like straining a point to say that the secondary growths in glands have a structure exactly like the original, because the tumour structure—although determined almost accidentally in the first instance—has become such an essential part of the morbid growth as to be transmissible to other parts, whatever their structure and however the infection be carried. Is it not more reasonable to suppose that the *form* of the morbid growth belongs to it from the beginning, is similar at all seats of its growth, and is transmissible wherever the disease is?

We are surprised that in this, the second edition of his work, Dr Creighton still refers only to the development of the mamma in the guinea-pig for the support of his peculiar view. Since the first edition was published, Mr Bowlby has investigated the development of the mamma in the human foetus, and has confirmed Kölliker's view, *i.e.*, that the glandular as well as the duct parts of the mamma develop from an invaginated bud of epiblast. Mr Bowlby read his paper at the meeting of the British Medical Association in 1883.

In our review of the first edition of this work in 1878, the bearing of this question was fully discussed. Since then there are no important alterations in it to record. As the preface tells us, "The present issue differs from the former in having a chapter on scirrhus cancers of the breast added." The book is philosophical and suggestive, and should certainly be read by all who wish to dip below the surface and get food for thought in their daily course of work.

Inflammations of the Liver and their Sequelæ. By Dr GEORGE HARLEY, F.R.S. London: J. & A. Churchill: 1886.

THIS is a pretentious volume, whose great characteristic is a straining after originality. The author is a man of recognised literary ability, but his reputation as a writer of the English language will not gain anything from the present work. We always fear in these later days anything from Dr Harley's pen, lest the spelling should be the outcome of an originality which brooks no trammels. Happily in the book now before us he is content with the current orthography, but unfortunately his composition is framed upon principles of his own. The opening sentences will amply prove this, and we cannot but deplore that one who can write well should affect a literary style which must be painful to every reader who respects his mother tongue, nay, which will assuredly cause all those whose leisure is limited to throw away the volume rather than waste time in the attempt to grasp the author's meaning.

The immediate object of the work appears to have been a desire to reply to Surgeon-general Moore's recent strictures on the views of the author regarding the cause of suppuration of the liver; and out of the 140 pages which the book contains, 64 are devoted to this subject. We may pass over this part of the work without comment, merely noticing that Dr Harley comes to the conclusion that a larger proportion "of Europeans dying in temperate England suffer from abscess of the liver in one form or another" than of either natives or Europeans dying in India.

A great deal of interesting matter is contained in the second half of the volume, and amongst the subjects discussed we must not omit to mention two novel modes of treating hepatitis by puncturing the capsule of Glisson, and by a process called by its author "hepatic phlebotomy." This we find to be carried out by piercing the liver with a trocar 8 inches in length and of the diameter of a No. 3 catheter.

The former of these two methods appears to have been performed several times with more or less success, but the second operation has only once been carried out. It was in the case of an intemperate lady with an enlarged liver, ascites, and œdema, whose death appeared inevitable. Twenty ounces of blood were removed by this means on the 4th October, and "from that day the liver became gradually reduced in size. With the aid of tapping and the administration of the resin of copaiba, the ascites and general anasarca disappeared; and by the beginning of December the patient was already able to walk out." Commenting on this case the author remarks, "If the history of this patient, and the result of the operation, be not sufficient to encourage the performance of hepatic phlebotomy in suitable cases, I know not what will. So I will offer no comments upon the subject, but confidently leave the

case as it stands to the consideration of the advanced school of thinkers among my medical brethren. Feeling certain that although this is but one case, as everything must have a beginning, and all know that a single positive result is more valuable in deciding a question than a thousand negative ones, they will not fail to give it the attention it merits." Following Dr Harley's example, we shall offer no comments upon the subject.

Von Ziemssen's Handbook of General Therapeutics. Vol. IV. "The Treatment of Disease by Climate," by Hermann Weber, M.D., F.R.C.P., translated by Heinrich Port, M.D., M.R.C.P. "General Balneotherapeutics," by Dr Otto Leichtenstern, translated by John Macpherson, M.D. London: Smith, Elder, & Co.

In the part of this volume which deals with the treatment of disease by climate, we are told that "climatology is a very extensive subject, is as yet in its infancy, and is based on other and likewise undeveloped branches of science, particularly aerology, meteorology, physical geography, and comparative geographical physiology and pathology." This stage of infancy has lasted long, for change of climate as a remedial agent was recommended by Hippocrates. "Aretæus recommended sea voyages and a residence at the seaside in phthisis; Galen treated the same disease by a kind of mountain climate, combined with milk diet; Celsus, like Aretæus, by sea voyages and sea climates; and the elder Pliny was of opinion that consumptive patients would be more benefited by residing in pine woods than by a sea voyage to Egypt, or by the milk treatment in mountain districts." It is at least comforting to know that our empirical use of climate for a common disease has the respectability of an ancient pedigree; and we value it none the less because it still occupies the regions of empiricism. Such knowledge as we possess on this important subject is to be found in this volume. The first chapter deals with the factors which go to form climate: here are discussed the warmth as well as the moisture, pressure, and electrical conditions of the atmosphere, their distribution, and the causes of their variation. This is followed by a classification of climates into various kinds of marine and inland climates, with a statement of the climatic characters of a vast variety of places, from Iceland to Australia, from the island of Bute to the Fiji Islands, and from the Rocky Mountains to the deserts of Africa. A short chapter is devoted to the choice of a climate for the treatment or prevention of disease, while the important subject of home climatic treatment in specially constructed establishments is confined to a couple of pages.

The second part of the volume deals with general balneotherapeutics, and we are informed that balneotherapy is the "science of

the therapeutic application of mineral waters," or "the science of the method and mode of operation of bath and well cures." In the first few pages the author includes a philippic against the charlatantry which surrounded this method of treatment in past days, and even indicates that there remains a tendency in certain quarters to exaggerate the beneficial results of treatment by certain methods and at certain springs from motives which can hardly be regarded as philanthropic. The author seems to us to approach his subject in a strictly fair spirit. He says,—“If we ask the question whether that backward branch of the subject, balneotherapy, has taken any part in this progress of the more accurate method of therapeutics, we must give a doubtful answer;” and again, “the present position of balneotherapy is empirical, and is founded on the observation and experience of physicians.” He then proceeds to give us whatever accurate knowledge as well as whatever empirical knowledge has been accumulated. In the first part are considered the physiological and the therapeutic action of the simple and other baths employed in balneotherapy as affecting body temperature, change of tissue, and the various systems. In the second part the physiologico-therapeutic action of water in its internal application is briefly considered, and he concludes that “numberless drinking cures owe more of their efficacy in diseases to the diuretic and washing-out effect of the water drunk in increased quantity, than to the salts and gases dissolved in it,” with which opinion many will concur. The third part is devoted to the pharmaco-dynamic and therapeutic actions of the most important groups of mineral wells; and the monograph concludes with a synopsis of the empirical indications of different drinking and bathing cures in individual diseases.

Dealing with the subjects which it does this volume occupies an almost unique position, and will prove a valuable work of reference when the practitioner has to select a climate for his patient, or recommend a suitable change during convalescence.

The Alkaline and Non-Alkaline Treatment of Acute Rheumatism.
By C. S. TAYLOR, M.D., B.Sc. Henry Kimpton, London.

It would be as difficult in a short review to convey an accurate idea of this book as it is to understand why it has been written. The object seems to be to compare the value of an alkaline with a non-alkaline method of treatment; but the reader soon finds the two forms of treatment jumbled up in a most extraordinary way. Mixed up in the table of cases treated by the non-alkaline method are some which have only had the bicarbonate of potash as a medicine. How such treatment can be termed non-alkaline it is difficult to imagine. It is stated by the author that there is no

such thing as a specific for rheumatic fever, but surely we have got something very like it in lemon juice, with which Dr Taylor cures some of his patients in the short space of three or four days. The treatment of his cases seems to have been very varied, such simples as a few ounces of lemon juice being used in some, and such heroic measures as from twelve to sixteen grains of opium in twenty-four hours in others. The various methods of treatment employed are illustrated by numerous cases. The book is written in very bad English, some mistakes being very glaring.

The Mouth. By JOHN STEWART, D.D.S., F.S.Sc. (London), Surgeon Dentist, Dundee. James McGeachy & Co., Glasgow.

THIS work is given to the public as a popular treatise on dentistry. It contains chapters on the structure of the teeth, teething, toothache, extraction of teeth, and the manufacture of artificial teeth. The book is got up in a very superior style, well bound, and printed on excellent paper, with many good plates, but it is very doubtful if the public for whom it is written will gain much by its perusal. It seems a pity that so much should have been expended in its production, when its contents are of such small value.

Epidemic of Measles in Sunderland. By H. DRINKWATER, M.D., C.M., M.R.C.S. James Thin, Edinburgh.

THIS is a thesis which was awarded a gold medal by the Edinburgh University last year, not *the* gold medal as the author informs us. It is a careful and detailed record of an extensive epidemic of measles which prevailed in Sunderland, and must have required much industrious labour, especially in a busy practitioner, for its production.

The symptoms, diagnosis, prognosis, and treatment are carefully gone into, as well as the complications and sequelæ.

At the end the cases are brought together in a tabulated form, the table occupying many pages of the thesis.

The Journal of Anatomy and Physiology, Normal and Pathological. Vol. XX. p. 111, April 1886. Williams & Norgate, Edinburgh.

A CONSIDERABLE proportion of the papers in this number are by Edinburgh graduates, and, from a study of its contents, we believe it to be of even more than usual interest and value.

Dr J. W. Fraser's article on "The Action of Infused Beverages on Peptic Digestion" is supplementary to one published in a previous number of this journal. From his former experiments he

concluded that all infused beverages retard the peptic digestion of albuminoid food stuffs, except ham and white of egg with coffee, and fish with cocoatina and with cocoa. The retardation in the case of both coffee and tea are due to the tannic acid and volatile oils they contain, while their alkaloids appear to assist digestion. In the case of cocoas the alkaloid, as well as the other substances, delay digestion. In this paper the author modified some of his former experiments, but the general results were the same as before. With regard to the causes of the retardation, "teas" produce precipitates which entangle and carry down the pepsin, and also precipitate the syntonin as formed during digestion. Dr Fraser believes that there is a great loss from eating meat and drinking infused beverages at the same time; but it appears that the digestion of the meats generally taken at breakfast—viz., ham, egg, and salt beef—is less retarded by the action of tea or coffee than that of other meats. Ladies' afternoon teas apparently rest upon a sound physiological basis, for, according to Dr Fraser, "the best time for drinking these infused beverages is undoubtedly about 5 P.M., when the lunch has been digested, and the cup of tea or coffee carries the energies on till dinner."

"Some Variations in the Human Skeleton," by W. Arbuthnot Lane, M.S., F.R.C.S. He describes various examples of deviations from the normal form in the spinal column, skull, and thorax, several of which are of interest in connexion with practical medicine and surgery. From the frequency with which he found alterations in the position of the ribs and costal cartilages, he protests strongly against the clinical habit of gauging too accurately the size of the heart by the relation borne by the apex beat to the nipple and the interspaces. Mr Lane refers to a number of alterations in the skeleton found in those who have led laborious lives. In one subject the shoulders presented indications of a double sub-coracoid dislocation. The direction of the glenoid cavity had been shifted forwards, carrying the humerus with it, so that the posterior part of the acromion was more prominent, and projected more behind the head of the humerus than usual.

That indefatigable worker in the department of comparative pathology, Mr J. Bland Sutton, has an interesting paper "On the Origin of Certain Cysts," which is well worthy the attention of surgeons, and shows in a very distinct manner the light which embryological investigation throws upon the cause and situation of various cysts.

Dr D. Noel Paton continues an account of his very valuable researches, "On the Nature of the Relationship between Urea Formation and Bile Secretion;" and Dr J. Lockhart Gibson completes his elaborate investigation of "The Blood-forming Glands and Blood Formation." There are also contributions by Sir William Turner, Professor D'Arcy W. Thompson, and Drs Macdonnell, Schufeldt, Robertson, and Tuckerman.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LXV.—MEETING X.

Wednesday, 2nd June 1886.—Prof. GRAINGER STEWART, *President, in the Chair.*

I. ELECTION OF NEW MEMBERS.

David Berry Hart, M.D., and Walter Scott Lang, M.B., were elected Ordinary Members of the Society.

II. EXHIBITION OF PATIENTS.

1. *Mr A. G. Miller* showed—(a.) A female patient suffering from a rare and somewhat interesting ATROPHY OF THE LEFT ARM. About twelve years ago she had a cellulitis of the forearm. As a result sloughing and hæmorrhage took place, and for this two vessels, probably the radial and ulnar arteries, were tied. The cellulitis spread up through the whole arm. The atrophy which followed had gone on progressing ever since. The skin was almost entirely replaced by cicatricial tissue. Sensation was present, but less on the dorsal than on the palmar aspect. In some parts there was slight hyperæsthesia. The muscles on the dorsal aspect were more completely atrophied than on the flexor. The extensors were almost gone, and the dorsum of the wrist was covered by cicatricial tissue so thin that the bloodvessels were distinctly seen through it. The palmar aspect of the hand was still natural. The fingers were distorted and contracted. The nail of the little finger had grown and was curled like a ram's horn. She had a certain amount of movement of the fingers due chiefly to the interossei. The flexors were felt to work, but the extensors barely. Pronation and supination were gone, but this was mainly due to fusion of the radius and ulna, the result of a fracture of both bones of the forearm, for which she first came under Mr Miller's care two years ago. The bones were also atrophied, not as regards their length, but as regards their circumference. There was ankylosis of the elbow, but the movements of the shoulder were almost perfect. The cause of this peculiar condition was doubtful. The cellulitis was not sufficient to account for it. The ligature of the vessels would only account for atrophy on their distal side. There were marks of suppurations all over the body, which were probably the result of rupia or some other syphilitic affection, and there were other indications of a probable syphilitic condition. (b.) A man who nine months ago sustained a severe COMPOUND FRACTURE OF THE FOREARM. It was his duty to look after the injury which worked

the water-pump for the Waverley Station. When the man was cleaning the engine some one set it agoing, and the crank came down on his forearm, causing a fracture of such severity that little more than the vessels and skin on the flexor aspect were left whole. Two inches of radius and three of ulna were then removed and the bones replaced. Though the wound healed they did not unite, and had afterwards to be cut down upon and wired. He had since made a good recovery.

Dr Byrom Bramwell showed in connexion with Mr Miller's first case a photograph of a fisherman suffering from phthisis, showing atrophy of the muscles of the shoulder and upper arm. He had fallen, when a child, on the shoulder, and had his arm bandaged in one position for two months, after which it atrophied. Though the muscles were atrophied the joint was very mobile. There appeared to be slight shortening of all the bones, but the remarkable point was that while the biceps and brachialis anticus were completely atrophied, no trace of muscular fibres being detected, with a strong faradic current (the best mode of examination in cases of this description) the patient could still flex the elbow; in bending it he first closed the fingers, then pronated the forearm, then flexed forearm on the arm, this movement being attended with supination. The pronators were largely developed. The triceps was completely atrophied. It was a little difficult to say what the lesion had originally been. The atrophied condition of some of the muscles was probably the result of disease.

2. *Dr Byrom Bramwell* showed a male patient, a slater, who some eight weeks ago was so well that he was able to work at his ordinary occupation as a slater on the top of a roof. He then began to suffer from weakness of the limbs, which had gradually progressed until he was hardly able to walk. The case was evidently a spinal one, probably, *Dr Bramwell* thought, a disseminated myelitis, associated with atheroma of the bloodvessels. It presented this remarkable feature, that there was in the left leg a most perfect knee clonus, but the ankle clonus on the same side was not present.

III. DEMONSTRATION OF MODES OF TREATMENT.

Dr W. Allan Jamieson demonstrated and explained a number of NEW MODES OF TREATING SKIN DISEASES introduced by *Dr Unna*, of Hamburg. He observed that in the end of April he had gone across to Hamburg in order to see his friend *Dr Unna*, who had most courteously shown him the methods in use. Taking

(1.) *Eczema*.—This is much more frequent among civilised races because the skin as a whole, and the horny layer in particular, become less resistant owing to the excessive amount of protection afforded. The anæmia of city life also favours the development of eczema, while the wear and tear of the nervous system affects injuriously its controlling power on nutrition. In treatment these

circumstances must be borne in mind, and as a means of prevention all soaps which are alkaline or even neutral are contra-indicated. The true principles in the manufacture of a soap are—(a.) The use of pure fats only, and the avoidance of cocoa-nut oil, which, even in small proportion, dries the skin. (b.) The presence of an excess of free fat over the saponified alkali. The British public have been educated into the belief that a soap must lather in order to cleanse well; and to make a soap lather cocoa-nut oil is said to be necessary. But a soap will cleanse perfectly without lathering; and in Unna's overfatty basic soap the conditions laid down are perfectly fulfilled. This soap cleanses the skin most completely, but leaves it soft and cool; and when used for infants it obviates or cures the lichenous eruption so apt to appear within a few days after birth, and which is mainly due to the employment of an alkaline soap. This soap should be exclusively used by eczematously disposed persons.

The treatment of extensive eczemas is impossible with ointments and not satisfactory with lotions, the effect of which latter is ephemeral. For these, gelatine preparations were first introduced by Pick of Prague. His consisted of gelatine and water, which after being melted were painted on, and then the layer of glue thus formed on the skin was kept from cracking and peeling off by a thin film of glycerine smeared on. This plan was found troublesome, and, at Unna's suggestion, was replaced by his glycerine jellies, of which a valuable one consists of zinc oxide, 15; gelatine (Cox), 10; glycerine, 30; water, 40. This, when melted and painted on, forms a non-irritating adhesive layer. It can be covered with a film of absorbent cotton. It is specially valuable over joints, as at the bend of the elbow.

Dry Eczemas of the *palms* were formerly very intractable, and the only method of softening the warty masses was by means of solutions of caustic potash. This was apt either to do too little or too much. Unna has suggested that in these the peculiar action of salicylic acid on the horny layer of the epidermis in softening it and causing it to exfoliate might be serviceable. But for this purpose the acid must be retained in contact with the skin, under an impermeable dressing, such as the salicylic plaster muslins introduced by Unna, and made by Beiersdorf, Altona. By these the rough, thickened horny layer can be caused gradually and completely to exfoliate, and the surface thus exposed is ready to be treated with suitable ointments, or with *Salve muslins*. Those consist of fine muslin incorporated with consistent salves, and are made either one or two sided, the latter containing a more abundant amount of salve. Suitable pieces can be cut off and applied, and secured either with a turn of bandage, or the margins can be painted with glycerine jelly, and this covered with absorbent cotton. The salve muslins are of value on parts where there is comparatively little movement, or to complete the cure of cases carried so far by other means. Zinc ichthyol and lead salve muslins are those most in use.

Powder Bags.—On various parts of the body, but especially in eczema of the scrotum and of the inguinal regions in both sexes, the value of dusting powder is thoroughly recognised, but the effect of this application is transitory, as generally used. But by partially filling bags made of moderately porous cotton with powdered starch, and then quilting the bags to separate the powder, a continuous application of the powder can be maintained on the parts to which these are adjusted, as each movement displaces some. When they are used, the simultaneous employment of ointment is contra-indicated.

(2.) *Rosacea.*—This is met with in two forms. In one the tendency is towards acne vulgaris; the skin is thick, rather inactive, and the coexistence of acne pustules is common. In the other the skin is thin, the surface rough and somewhat eczematous. If acne be present the pustules are superficial, and with the dilated vessels and unnatural redness of the parts present in both forms, there is in the latter some degree of itchiness. In both Unna uses salts of sulpho-ichthyolic acid, especially the sulpho-ichthyolate of ammonia. This is a dark brown fluid, freely miscible with water, and possessing a peculiar though not disgusting taste and odour. It is administered in doses of 5 to 15 minims, freely diluted, twice a day. By its use internally and externally, Unna claims to have rendered rosacea easily curable; and Dr Jamieson's experience, though limited, was favourable. He had also found it exert more beneficial effects on chronic rheumatoid arthritis than any remedy he had tried. Externally in the acne form the use of very hot water, washing with ichthyol soap, and the application of a paste consisting of sulpho-ichthyolate of ammonia 3·0, dextrin, glycerine, and water, each 10·0 parts, was the treatment recommended. In the eczematous, zinc ichthyol glycerine jelly, painted on, or a lotion containing 10 per cent. of the sulpho-ichthyolate of ammonia, with adjusted starch powder bags, give the best results. The proportion of ichthyol in the jelly is 2 per cent.

(3.) *Lupus.*—The treatment of lupus has in the last decade undergone so many and such rapid changes as to lead to positive confusion. Since Volkmann introduced the sharp spoon, and Vidal and others multiple scarifications, the mechanical modes of dealing with lupus held for a considerable time their ground. But the discovery of micro-organisms, though in small numbers, in the lupoid tissues, and the identification of these with the bacillus tuberculosis, had its influence on treatment. Besnier forcibly opposed the bloody methods of treatment on the ground that constitutional infection might so arise, and though the case was probably overstated, the effect has been to limit the employment of the curette and fine knife, or in accordance with the suggestion of Dontrelepon to dress subsequently with a weak corrosive sublimate lotion, as an antiseptic and parasiticide. But even thus the method was not found to be thoroughly effective. Cases undoubtedly were cured by those measures, but relapses occurred in

some, and in others no advantage was gained, and the disease progressed. Nor was pyrogallic acid, as recommended by Kaposi and Besnier, better; while it is not in all cases innocuous, being apt to cause charring of the tissues and ulceration. At this stage, when distrust of old methods and the apparent failure of new had arisen, Unna steps in and offers a mode which seems to meet all requirements. In salicylic plaster muslin of various strengths the acid can be brought into the closest contact with the surface. Salicylic acid acts solely on the horny layers of the sound skin, never on the corium; but in lupus it acts on the diseased tissues, and dissects out the nodules, following the new growth into its fine ramifications along the bloodvessels. But it is painful, and on this account patients refused to allow its continued use. After many trials of anæsthetics, as cocaine, cannabis indica, opium, etc., Unna discovered that creosote, in the proportion of double that of the acid, perfectly obviated the painfulness, with one reservation. The creosote seems less rapid in action than the acid. Hence there is some pain for ten to fifteen minutes after application of the plaster; but this ceases, and is only aroused by the employment of a fresh bit of plaster muslin. If an actually painless method is desiderated, the part can be painted on the second and the subsequent applications with 4 per cent. cocaine solution, and in ten minutes the plaster placed on the patch. Three strengths of the salicylic creosote plaster muslin are made—10 per cent. $\times$ 20 per cent.; 15 per cent. $\times$ 30 per cent.; 20 per cent. $\times$ 40 per cent. In slighter forms, as in lupus of the cheeks, the milder form can be used; but a more rapid action is obtained by the stronger. The plaster is changed once or twice a day, the part being washed or wiped before the new plaster is applied. The piece of plaster adjusted should extend a little beyond the diseased area. In some cases the disease is destroyed, and cure effected by the plaster alone. In others, when sufficient destruction has been accomplished, the employment of it is discontinued, and a zinc salicylic plaster or salve muslin may be applied to heal the surface. Any subsequent redness can be removed by a zinc ichthyol glycerine jelly. Two patients under treatment were shown, one all but cured, the other with healthy granulations in place of lupus tissue. These suggestions alone serve to place Unna in the foremost rank of living dermatologists.

IV. EXHIBITION OF PATHOLOGICAL SPECIMENS.

1. *Dr Johnson Symington* showed specimens of *GENU VALGUM* and *TALIPES EQUINO VARUS*.

2. *Dr Maclaren* showed the *LARYNX* and *TRACHEA* and portions of *SMALL INTESTINE* from a case of burning, which came under his care at Chalmers's hospital.

Dr Littlejohn said he had no doubt as to the cause of death in this case. They found the blood on the right side of the heart coagulated, a condition which was never seen in cases of death by

asphyxia. The mischief done to the pharynx was very like that usually done by a hot vapour. The serous membranes were affected, the pericardium in particular, almost giving the idea of a commencing attack of acute pericarditis. The points of special interest were the congestions of the duodenum and ileum close to the ileo-cæcal valve, where there was a clot under the mucous coat. These conditions sometimes went on to ulceration, but in thirty years' experience he had met with only one such case, in that the ulcer had opened in the duodenum posteriorly.

IV. ORIGINAL PAPER.

Dr Craig read his paper on a CASE OF A FULL-GROWN FŒTUS, EXHIBITING THE RARE MALFORMATION OF A CYCLOPS, which appeared at page 193 of this Journal.

Dr Byrom Bramwell showed a photograph of a similar case which he had exhibited to the Society some years previously. He had not had an opportunity of dissecting it, as it mysteriously disappeared after a meeting in Newcastle, and had not been heard of since.

Dr Symington remarked that a peculiar case of the kind had been recorded in the *Lancet* by an Australian practitioner, in which the fœtus was said to have lived six hours, to have moved its eyes about, and followed objects with it!

SESSION LXV.—MEETING XI.

Wednesday, 7th July 1886.—Professor GRAINGER STEWART, *President, in the Chair.*

I. EXHIBITION OF PATIENTS.

1. *Mr A. G. Miller* showed a case of FÆCAL FISTULA in the left inguinal region. The patient was a man aged 54, on whom Littre's operation for colotomy had been performed. This operation, he considered, was easy of performance, and was one to which very little risk attached. He proposed at a later date to stitch up the distal end of the bowel in order to prevent fæces passing into the rectum, which, when it occurred, caused considerable pain.

Dr Bramwell asked whether *Mr Miller* thought that an operation in that position was more or less likely to be associated with peritonitis than the operation of lumbar colotomy.

Mr Miller said that in the published cases this was raised as an objection to the inguinal operation, but many of these cases occurred before the days of antiseptics, and he should not now consider it an objection.

2. *Dr James* showed, for *Dr Brakenridge*, a PATIENT at present in his ward in the Royal Infirmary. The man had an attack of right hemiplegia five months ago (Feb. 1, 1886). Descending sclerosis supervened, with increased reflexes and clonus in the right ankle

and knee. More recently, Dr Brakenridge observed a similar increase of the reflexes and clonus in the left ankle and left leg, and what is perhaps more specially worthy of notice, that the clonuses of the left—that is to say, as far as the hemiplegia is concerned, the non-affected side—are more rapid than those of the right. I have timed these, and find them as follows:—Right ankle, 6 per sec.; right knee, 6·8 to 7 per sec.; left ankle, 6·8 per sec.; left knee, 8·6 per sec. It may be within the recollection of the members of this Society that some years ago I indicated a relationship between the rapidity of the clonus and the distance of the muscles concerned from their nerve centres in the cord, and that this was that the further these muscles were from their nerve centres the slower was the clonus. Thus the ankle clonus is slower than the knee, the knee than the hip, etc. This relationship is borne out by the case before us, as the knee is always quicker than the corresponding ankle; but the fact that the clonuses of the left side are quicker than those of the right shows that other and probably subordinate influences can affect the rate. What these are it is difficult to say, but we know, for example, that the tension of muscle is one. In the case of this patient the clonus of the right quadriceps extensor cruris can be increased from 6·6 to 8 per sec. as the result of tension.

3. *Dr Allan Jamieson* showed—(a.) a lad who since childhood had suffered from ICHTHYOSIS, affecting the whole of the outer surface of the arms, the greater part of the trunk, and thighs. Under Unna's overfatty soap and an ointment of resorcin, the skin was now almost perfectly smooth. He perspired freely over the chest and back. On certain parts there was a number of lines which seemed to be due to hypertrophy, but if the skin was stretched they were seen to be atrophic, and were due to the pressure of the ichthyotic plates. He had been under treatment for five weeks. (b.) The case of MORPHŒA which he had shown a year previously. Since then one of the masses of morphœa had enormously increased, and some had disappeared. Others had become less. No new ones had appeared on the head. He had, however, developed a morphœa in a new locality—over the front of the sternum, where violaceous patches were to be seen resembling those on the head. He was not certain whether there might not be a sarcomatous growth complicating the disease on the chest. (Two days after, this man caught cold at the Exhibition, developed a pneumonia, and died. The growth from the sternum is being examined by Dr A. Bruce.)

4. *Dr Hodsdon* showed, for Dr Duncan, a woman suffering from CIRROID ANEURISM. One operation had been performed, and it was practically cured. The needles were kept in for about twenty minutes. It was a curious fact that Dr Duncan had seen of these cases up to three weeks ago only eight in twenty years, but during the last three weeks had seen five.

II. PATHOLOGICAL SPECIMENS.

1. *Dr Skene Keith* showed—(a.) A SARCOMA OF THE RIGHT KIDNEY, WITH ADHERENT INTESTINE, removed from a lady aged 49. When first seen she had in addition a large uterine fibroid and a sprouting mass at the umbilicus. The authorities in London had decided that the kidney tumour was liver, and advised that nothing should be done. As, however, she had not long to live on account of hæmorrhage from the growth at the navel, Dr Keith removed it. It was a round-celled sarcoma. Some months after he was induced to attempt the removal of the kidney; but finding that it was adherent to the peritoneum beneath the incision, he closed the wound. For the next year the patient led a miserable existence, due to frequent attacks of peritonitis, which several times brought her to death's door; and at last she persuaded Dr Keith to remove the uterine tumour. By this time menstruation had ceased; the uterine tumour was rapidly decreasing in size. A large part of the abdominal wall had to be removed attached to the tumour, which was closely adherent in every direction. It had burst through into the peritoneal cavity, and had become adherent there. A large amount of intestine had to be separated, and one piece, about 3 or 4 inches in length, had to be left attached to the new growth, and the ends sutured together. A drainage-tube was put in, and the wound closed. The operation was a very long one, lasting one hour and twenty minutes. The patient lived for six and a half days. A post-mortem was made shortly after death. There were signs of peritonitis, but on reaching the sutured intestines fæces were found on both sides of the join. On touching, part tore through. One end of bowel was healthy; the other, which had been injured when being separated off the tumour, had become gangrenous in part of its circumference. He had little doubt that had 5 or 6 inches more of the gut been removed, the lady would have recovered with very little trouble. (b.) AN ENCEPHALOID CANCER OF THE RIGHT KIDNEY removed from a gentleman, aged 61. The operation was a difficult one, owing to the friable nature of the tumour and to adhesions to the capsule. Comparative little blood was lost, and at the end of forty-eight hours they heard that the patient was very well; pulse 78, temperature normal. However, shortly after that he began to vomit, and died in twelve or fourteen hours. Extension of the disease into the renal vein was found on microscopic examination after death. (c.) A HYDRONEPHROSIS OF THE KIDNEY, which gave rise to great pain and inconvenience, and required tapping at intervals of a few months. The operation, due to the cystic condition, was much less difficult than either of the others, and the patient is now in good health. (d.) A UTERINE FIBROID, weighing 16 lbs., attached to a pregnant uterus, containing a three months' fœtus.

2. *Dr Cotterill* showed PORTIONS OF SEVEN RIBS resected in a

case of empyema. Since the operation the chest had fallen in 3 inches, the pus was daily diminishing, and the patient had improved in every respect locally and generally. In addition to the bones, portions of the intercostal muscles and pleural sac were removed, leaving an enormous cavity.

3. *Mr A. G. Miller* showed—(a.) the PARTS from a case of INGUINAL COLOTOMY. The patient was an old woman who had suffered from an obstruction in the rectum for some months, and impaction of *fæces*. She had a fistulous opening between the rectum and vagina. She was in a very unfavourable condition for operation, but as she was very anxious to have something done, inguinal colotomy was performed. She died shortly after, and a post-mortem examination showed that suppurative peritonitis had occurred, but was confined to the immediate neighbourhood of the wound. (b.) Two CALCULI removed from a male cadaver sent him for class operations. There being a stricture, suprapubic instead of the usual lateral lithotomy was performed, and it was when assisting the operator that he found the calculi in the bladder. There had been septic cystitis, pyelitis, and pyo-nephrosis. The calculi were completely worm-eaten, probably from some chemical product in the urine, produced by the septic condition.

4. *Drs James and Bruce* showed MICROSCOPIC SECTIONS OF TUBERCULAR ULCER OF THE TONGUE. The specimen was taken from the tongue of a man, J. H., æt. 44, who had suffered from pulmonary phthisis for probably ten years. The disease was of the fibroid type, and was very chronic, and, with the exception of laying him up for some weeks on several occasions after somewhat profuse hæmoptysis, it did not until the beginning of last June prevent him from following out, in an easy way, his employment in an upholstery establishment. Last winter was, however, too much for him. At the beginning of it he had a severe hæmoptysis; after it hectic fever, which hitherto he had never experienced, supervened, and becoming gradually weaker, he died on 13th February. The ulcer of the tongue began in June last on the right side, near the tip, as a small pimple. This bursting left a small ulcer, which gradually increased in size till at death, irregularly oval in shape, it measured about $\frac{3}{4}$ inch by $\frac{1}{2}$ inch, and had a depth of about $\frac{1}{8}$ inch. Its surface during life appeared granulated, and was usually covered by a grayish mucus. At times, however, this was absent, when it had the aspect of raw meat; its edges were quite level with the surrounding surface, and they were not swollen nor indurated, but were distinctly undermined. The surrounding mucous membrane was perfectly healthy. The patient did not complain of any great amount of pain; he suffered from it somewhat in eating, but not to anything like the extent usual in such cases. Salivation was not marked. There was no enlargement of the lymphatic glands beneath the

jaw, and during the whole course of the disease there were no laryngeal, intestinal, or other complications. The only treatment was the use of borax and chlorate of potash lotions. Such ulcers, though not common, have often been described, and in Butlin's book, and in the *Transactions of the Pathological Society of London*, full accounts of them can be obtained. They are rarely the primary manifestations of tubercle, but, as in this case, are usually secondary to pulmonary disease. In connexion with their position, a point to which Dr James drew attention was that they were probably caused by infection from the sputum. They knew that if animals are made to eat tubercular matter the mucous membrane of the pharynx, etc., readily becomes infected. Now, the sputum will act similarly; and when we recollect that in the performance of the act of spitting there is great risk of abrasion of the front part of the tongue by the teeth, we can readily understand how inoculation is then likely to occur. Of course if the teeth are decayed, irregular, and sharp-pointed, the risk is much increased. A scraping of the ulcer during life was examined for bacilli. Why pain should be so common we can understand, when we remember that the tip of the tongue is the most sensitive part of the body.

5. *Dr Bramwell* showed—(a.) AN ANEURISM OF THE RIGHT INTERNAL CAROTID ARTERY from the case described at page 97 of this Journal. (b.) SPECIMENS OF CHARCOT'S MILIARY ANEURISMS from cases of cerebral hæmorrhage.

6. *Dr Philip* described AN IMPROVED METHOD FOR THE EASY DETECTION OF THE BACILLI OF TUBERCLE, the full account of which will appear in a future number of this Journal.

III. NEW INSTRUMENT.

Dr Philip showed a NASAL INSUFFLATOR, which he had found of considerable value. It was largely used in Germany. He believed that in many cases of disease of the nasal cavity treatment, carried out by means of dry powders, was more efficient than treatment with the douche. With such an insufflator, soothing, astringent, antiseptic, and other remedies could be conveniently exhibited. On the Continent it was much in vogue for the exhibition of quinine in pertussis.

IV. ORIGINAL COMMUNICATIONS.

1. *Dr Stevens* read A COMMUNICATION ON THE COLD NITRIC ACID TEST FOR ALBUMEN IN THE URINE AS AN AID TO THE DETECTION OF THE BILE SALTS, which will appear in a future number of this Journal.

2. *Dr Carmichael* read his paper on BRONCHIAL CATARRH IN CHILDREN, which appears at page 326 of this Journal.

Owing to the lateness of the hour there was no discussion.

INFORMATION REGARDING MEDICAL EDUCATION AND EXAMINATIONS.

THE following are the General Medical Council's Requirements for the Preliminary Examination of Medical Students:—

No person shall be allowed to be registered as a Medical Student unless he shall have previously passed a Preliminary Examination in the subjects of General Education as specified in the following list:—1. English Language, including Grammar and Composition; 2. Latin, including Grammar, Translation from specified authors, and Translation of easy passages not taken from such authors; 3. Elements of Mathematics, comprising (a) Arithmetic, including Vulgar and Decimal Fractions; (b) Algebra, including Simple Equations; (c) Geometry, including the first book of Euclid, with easy questions on the subject-matter of the same; 4. Elementary Mechanics of Solids¹ and Fluids, comprising the Elements of Statics, Dynamics, and Hydrostatics; 5. One of the following optional subjects:—(a) Greek; (b) French; (c) German; (d) Italian; (e) any other Modern Language; (f) Logic; (g) Botany; (h) Zoology; (i) Elementary Chemistry. These subjects may be passed at one or more Examinations.

The following List of Examining bodies are recognised for registration as Medical Students, provided that in all cases the subject of Mechanics, as above set forth, be shown to have been included in the Examination:—

(1.) UNIVERSITIES IN THE UNITED KINGDOM.

Oxford.—Examination for a Degree in Arts; Responsions; Moderations; Local Examinations (Senior), Certificate to include Latin and Mathematics; Local Examinations (Junior), Certificate to include Latin and Mathematics; and also one of the following optional subjects:—Greek; French; German.

Cambridge.—Examination for a Degree in Arts; Previous Examination; Local Examinations (Senior), Certificate to include Latin and Mathematics; Local Examinations (Junior), Certificate to include Latin and Mathematics, and also one of the following optional subjects:—Greek; French; German; Higher Local Examinations.

Durham.—Examination for a Degree in Arts; Examination for Students at the end of their first year; Examination for Certificate of Proficiency.

Oxford and Cambridge Schools' Examination Board.—Certificate to include the following subjects, an adequate knowledge of English Grammar and Orthography, as shown in the course of the Examination, to the satisfaction of the Examiners, being held as conforming to the requirements of the Medical Council in regard to those subjects:—(a) Arithmetic, including Vulgar and Decimal Fractions; (b) Algebra, including Simple Equations; (c) Geometry, including the First two books of Euclid; (d) Latin, including Translation and Grammar; (e) and one of the following optional subjects:—Greek, French, German.

London.—Examination for a Degree in Arts or Science; Preliminary Scientific (M.B.) Examination; Matriculation Examination.

Victoria University.—Preliminary Examination, Latin to be one of the subjects; Entrance Examination in Arts, to include all the subjects required.

Edinburgh.—Examination for a Degree in Arts; Preliminary Examination for Graduation in Science or Medicine and Surgery. Local Examinations (Senior Certificate); Certificate to include English Literature, Arithmetic,

¹ In the case of Students in Universities with a prolonged curriculum, where the Examination in Mechanics required for their Degree is taken at a more advanced period of study than before commencing Medical Education, Registration can be effected only on having passed the Examination in Mechanics, but their Registration may be then antedated to the period at which the Preliminary was passed.

Algebra, Geometry, Latin, and also one of the following optional subjects :—Greek, French, German. Local Examinations (Junior Certificate), Certificate to include English Literature, Arithmetic, Algebra, Geometry, Latin, and also one of the following optional subjects :—Greek ; French ; German.

Aberdeen.—Examination for a Degree in Arts ; Preliminary Examination for Graduation in Medicine or Surgery ; Local Examination (Senior Certificate) ; Certificate to include English Literature, Arithmetic, Algebra, Geometry, Latin, and also one of the following optional subjects :—Greek, French, German. Local Examinations (Junior Certificate) ; Certificate to include all the subjects required.

Glasgow.—Examination for a Degree in Arts ; Preliminary Examination for Graduation in Medicine or Surgery ; Local Examinations (Senior Certificate) ; Certificate to include English Literature, Arithmetic, Algebra, Geometry, Latin, and also one of the following optional subjects :—Greek, French, German. Local Examinations (Junior Certificate) ; Certificate to include all the subjects required.

St Andrews.—Examination for a Degree in Arts ; Preliminary Examination for Graduation in Medicine or Surgery ; Local Examinations (Senior Certificate) ; Certificate to include English Literature, Arithmetic, Algebra, Geometry, Latin, and also one of the following optional subjects :—Greek, French, German. Local Examinations (Junior Certificate), to include all the subjects required.

Dublin.—Examination for a Degree in Arts ; Public Entrance Examination ; General Examination at end of Senior Freshman year.

Queen's University (Ireland).—Examination for a Degree in Arts ; Entrance or Matriculation Examination ; Previous Examination for B.A. Degree ; Local Examinations for Men and Women ; Certificate to include all the subjects required by the General Medical Council.

Royal University of Ireland.—Matriculation Examination.

(2.) OTHER BODIES NAMED IN SCHEDULE (A) TO THE MEDICAL ACT (1858).

The Society of Apothecaries of London.—Examination in Arts.

Royal Colleges of Physicians and Surgeons, Edinburgh.—Preliminary (combined) Examination in General Education.

Faculty of Physicians and Surgeons of Glasgow.—Preliminary Examination in General Literature.

Royal College of Surgeons in Ireland.—Preliminary Examination, Certificate to include Mathematics.

(3.) EXAMINING BODIES IN THE UNITED KINGDOM NOT INCLUDED IN SCHEDULE (A) TO THE MEDICAL ACT (1858).

College of Preceptors. — Examination for a First Class Certificate, or Second Class Certificate of First or Second Division, Algebra, Geometry, Latin, and a Modern Language having been taken.

Intermediate Education Board of Ireland ; Junior, Middle, and Senior Grades. —Certificate in each case to include all the subjects required by the General Medical Council.

Queen's College, Belfast ; *Queen's College, Cork* ; *Queen's College, Galway*.—Matriculation Examination.

St David's College, Lampeter.—Responsions Examination to include all the subjects required.

Educational Institute of Scotland.—Preliminary Medical Examination.

(4.) INDIAN, COLONIAL, AND FOREIGN UNIVERSITIES AND COLLEGES.

Universities of Calcutta, Madras, and Bombay.—Entrance Examination, Certificate to include Latin.

McGill College, and Bishop's College, Montreal, Toronto.—Matriculation Examination.

Trinity College, Toronto; Queen's College, Kingston; Victoria College, Upper Canada.—Matriculation Examination.

University of Manitoba.—Previous Examination.

King's College, Nova Scotia.—Matriculation Examination; Responsions.

University of Halifax, Nova Scotia.—Matriculation Examination.

University of Fredericton, New Brunswick.—Matriculation Examination.

Dalhousie College and University, Halifax, Nova Scotia.—Matriculation and Sessional Examinations.

University of California.—Examination in Department of Letters.

University of Melbourne.—Matriculation Examination.

University of Sydney.—Matriculation Examination.

University of the Cape of Good Hope.—Matriculation Examination; Examination for a Degree in Arts.

University of Adelaide.—Matriculation Examination.

Codrington College, Barbadoes.—English Certificate for Students of two years' standing, and Latin Certificate, or "Testamur."

Tasmanian Council of Education.—Examination for the Degree of Associate of Arts, Certificate to include Latin and Mathematics.

Christ's College, Canterbury, New Zealand.—Voluntary Examinations, Certificate to include all the subjects required by the General Medical Council.

University of New Zealand.—Entrance Examination.

University of Otago, New Zealand.—Preliminary Examination.

Ceylon Medical College.—Preliminary Examination (Primary Class).

Germany and other Continental Countries.—Gymnasial Abiturienten-Examen, and other Corresponding Entrance Examinations to the Universities.

Gymnasia of the Circuit of Dorpat.—Examinations of Maturity.

The following pages contain a tabular abstract of the regulations of the various Licensing Boards, as well as a list of the Hospitals, Dispensaries, etc., attached to our Scotch Medical Schools; also the regulations for the Army, Indian, and Navy Medical Services. The space at our disposal does not allow of more detailed information. But, in point of fact, the regulations of all Licensing Boards now correspond much more closely than they used to do, and the regulations of the General Medical Council afford a key to the general requirements of all of them. For special information, application should always be made to the Secretaries of the Licensing Boards; or, in the case of the Universities, recourse may be had to the published Calendars.

The *Preliminary Examinations* are usually held before the commencement, and at the end, of the Winter Session,—viz., in October, March, or April—sometimes also at the end of the Summer Session. The *Professional Examinations* in Universities are usually after the Winter and during the Summer Sessions; in Edinburgh, however, the first Professional is held in October as well as April. The other Licensing Boards' examinations are held at various periods throughout the year. Special examinations, under circumstances of urgency, can be held at almost any time; but they, of course, entail considerable addition to the expense.

COURSE OF STUDY REQUIRED BY THE VARIOUS BOARDS OF THE UNITED KINGDOM.

	Age.	Anatomy.	Dissections.	Chemistry.	Practical Chemistry.	Materia Medica.	Physiology or Inst.	Surgery.	Practice of Medicine.	Midwifery.	Medical Jurisprudence.	Pathology or Morbid Anatomy.	Botany.	Natural History.	Practical Pharmacy.	Clinical Surgery.	Clinical Medicine.	Hospital Attendance.	Practical Midwifery.	Diploma or Cert. in Practice.	Vaccination.
	Year.	Month.	Month.	Month.	Month.	Month.	Month.	Month.	Month.	Month.	Month.	Month.	Month.	Month.	Month.	Month.	Month.	Month.	Month.	Month.	Month.
Edinburgh University, M.B. & C.M.,	21	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	24	6 mo.	6	6
University of Glasgow, M.B. & C.M.,	21	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	24	6 mo.	6	6
University of Aberdeen, M.B. & C.M.,	21	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	24	6 mo.	6	6
University of St. Andrews, M.B. & C.M.,	21	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	24	6 mo.	6	6
London University, M.B.,	21	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	24	6 mo.	6	6
University of Durham, M.B. & M.D.,	21	6	12	6	12	6	6	6	6	1 crs.	1 crs.	1 crs.	6	6	1 crs.	2 yrs.	2 yrs.	4 yrs.	90 cas.	6	6
Dublin University, M.B.,	21	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	24	6 mo.	6	6
Surgical Diploma,																					
The Queen's University of Ireland, M.D.,	12	18	6	6	6	6	18	12	6	6	6	6	6	6	3 mo.	27	9	24	6 mo.		
Royal College of Physicians, London,	12	12	6	6	6	6	12	6	6	6	6	6	6	6	6	12	12	24	3 mo.		
Royal College of Physicians, Edinburgh,	21	12	6	6	6	6	12	6	12	6	6	6	6	6	6	6	9	34	90 cas.		
King and Queen's Col. of Phys. Ireland,	21	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	94	6 cases		
Royal College of Surgeons, London,*	21	6	12	6	6	6	6	6	6	6	6	6	6	6	6	6	21	27	6 mo.		
Royal College of Surgeons, Dublin,	21	12	12	6	6	6	12	12	6	6	6	6	6	6	6	27*	9	33	6 mo.		
Royal College of Surgeons, Edinburgh,	21	18	12	6	6	6	18	18	6	6	6	6	6	6	6	18	9	27	6 cas.	6	
Faculty of Phys. and Surgeons, Glasgow,	21	12	6	6	6	6	6 or 12	6 or 12	6	6	6	6	6	6	6	6 or 12	6	24	6 cas.		
For Triple Qualification by Royal Colleges Phys. and Surge. of Edinburgh, and Faculty of Phys. and Surge. of Glasgow	21	12	12	6	6	6	6	6 or 12	6	6	6	6	6	6	6	6 or 12	6	24	6 cas.		
	21	6	12	6	6	6	6	6	6	6	6	6	6	6	6	6	9	24	6 cas.	6	
	21	12	6	6	6	6	6	6	12	6	6	6	6	6	Appt.	9	27	27	30 cas.		
Apothecaries' Hall, England,	21	6	12	6	6	6	6	6	6	6	6	6	6	6	Appt.		18	27	30 cas.		
" " Ireland,	21	6	12	6	6	6	6	6	6	6	6	6	6	6					30 cas.		

ENGLISH POOR-LAW BOARD.—Candidates for the appointment of Medical Officer are required to be registered under the Medical Act, and must be legally qualified to practise both Medicine and Surgery, in virtue of Diplomas or Licenses granted by competent legal authority in England, Scotland, or Ireland.

Information respecting exceptions to these regulations under various circumstances, and other details as to the order in which, according to some Licensing Bodies, the courses should be taken out, etc., must be obtained by consulting the published Charts of the Colleges, etc. Students should apply to the Secretary to each Board which they intend to pass for a detailed copy of its Regulations.

* Students from the Schools of Scotland are admitted to examination at the Royal College of Surgeons of England, if they have followed the course of study required by regulations of the Royal College of Surgeons of Edinburgh. Students in Scotland, therefore, are not required to attend more than one course of Physiology, six months' Surgery, six months Clinical Medicine, and twenty-four months hospital.

MEDICAL SCHOOLS OF SCOTLAND, 1886-87.

WINTER SESSION.

SUBJECTS.	UNIVERSITY OF EDINBURGH.	SCHOOL OF MEDICINE, EDINBURGH.	UNIVERSITY OF GLASGOW.	ANDERSON'S COLLEGE, GLASGOW.	GLASGOW ROYAL INFIRMARY SCHOOL OF MEDICINE.	WESTERN MEDICAL SCHOOL, GLASGOW.	UNIVERSITY OF ABERDEEN.	UNIVERSITY OF ST ANDREWS.
Anatomy, Systematic and Practical, with Demonstrations.	Prof. Sir W. Turner.	Mr J. Symington and Mr Macdonald Brown.†	Professor Cleland.	Dr A. M. Buchanan.	Mr H. E. Clark.	Mr J. T. Carter.	Professor Struthers.	
Physiology, or Institutes of Medicine.*	Professor Rutherford.	Dr James and Mr James Hunter.†	Professor M'Kendrick.	Dr James Christie.	Dr John Barlow.	...	Professor M'William.	Prof. Pettigrew.
Chemistry, and Practical Chemistry.	Professor C. Brown.	Dr Macadam, Mr King, Mr I. Macadam, and Dr Drinkwater.	Professor J. Ferguson.	Professor Dittmar.	Dr James M. Milne.	...	Professor Brazier.	Prof. Purdie.
Materia Medica and Therapeutics.	Prof. T. R. Fraser.	Dr W. Craig and Dr G. A. Gibbon.†	Professor Charteris.	Dr Morton.	Dr John Dougall.	...	Professor Davidson.	...
Practice of Medicine.	Professor Grainger Stewart.	Drs Wyllie, Affleck, Bramwell, G. Brown.†	Professor Gairdner.	Dr S. Gemmell.	Dr J. W. Anderson.	Dr M'Vail.	Prof. Smith-Shand.	...
Surgery.	Professor Chiene.	Mr Miller, Dr MacGillivray, Mr Cathcart, and Mr F. M. Caird.	Professor Macleod.	Dr Dunlop.	Dr W. Macewen.	Dr Knox.	Professor A. Ogston.	...
Midwifery, etc.	Professor Simpson.	Drs C. Bell, P. Young, and Milne Murray.†	Professor Leishman.	Summer.	In Summer.	Dr W. L. Reid.	Professor Stephenson.	...
Natural Philosophy.	Professor Tait.	...	Professor Sir Wm. Thomson.	Prof. Blyth.	...	...	...	Prof. Butler.
Natural History, and Practical Natural History.	Professor Cosser Ewart.	Mr J. A. Thomson.	Professor Young.	...	...	...	Professor A. Nicholson.	Prof. McIntosh.
General and Practical Pathology.	Professor Greenfield.	Dr A. Bruce.	...	At Royal or Western Infirmary.	In Summer.	At Western Infirmary.	Professor Hamilton.	...
Clinical Medicine.	Professors G. Stewart, T. R. Fraser, Greenfield, and Simpson on Diseases of Women.	Drs Muirhead, Brakenridge, Wyllie, Affleck, and H. Croom for Diseases of Women.‡	Prof. M'Call Anderson and Prof. Gairdner.	The Physicians of the Royal Infirmary.		Physicians of the Western Infirmary.	Drs Smith-Shand, Beveridge, and Fraser.	...
Clinical Surgery.	Professor Annandale.	Mr John Duncan.	Prof. George Buchanan and Prof. Macleod.	The Surgeons of the Royal Infirmary.		Surgeons of the Western Infirmary.	Drs Ogston, O. Will, and Garden.	...
Medical Jurisprudence and Public Health.	...	Dr Littlejohn.	...	Public Health—Dr Glaister.		...	...	...

In connexion with the University of Edinburgh during the Winter Session, lectures and clinical instruction on Diseases of Children, at Royal Hospital for Sick Children, are given by Dr James Andrew and Dr James Carmichael; on Comparative Embryology by Mr George Brook; and on Philosophy of Natural History by Mr G. J. Romanes.

Lectures are given in Edinburgh during the Winter Session on the Diseases of the Ear by Dr Kirk Duncan, on Diseases of the Eye by Dr John Robertson, and on Diseases of the Skin by Dr Allan Jamieson.

Practical Physiology is taught by the respective professors during the Winter Session, in Edinburgh and in Summer at Aberdeen.

Practical Surgery is taught during the Winter Session in the University of Aberdeen by Professor Ogston and Assistant.

* This course is equivalent to that given under the name of General Anatomy and Physiology in the English Schools. Special schedules are issued by the London Boards for their Scotch students which should always be inquired for.

† These are not conjoint courses, but separate ones by the gentlemen named.

‡ This is a joint course.

MEDICAL SCHOOLS OF SCOTLAND, 1887.

SUMMER SESSION.

SUBJECTS.	UNIVERSITY OF EDINBURGH.	SCHOOL OF MEDICINE, EDINBURGH.	UNIVERSITY OF GLASGOW.	ANDERSON'S COLLEGE, GLASGOW.	GLASGOW ROYAL INFIRMARY SCHOOL OF MEDICINE.	WESTERN MEDICAL SCHOOL, GLASGOW.	UNIVERSITY OF ABERDEEN.
Practical Anatomy and Demonstrations.	Prof. Sir Wm. Turner.	Mr J. Symington and Mr M. Brown.*	Professor Cleland.	Dr A. M. Buchanan.	Mr H. E. Clark.	Mr J. T. Carter.	Professor Struthers.
Botany.	Professor Dickson.	Mr A. N. M'Alpine.	Professor F. O. Bower.	Prof. Wilson.	...	...	Professor Trail.
Practical Materia Medica.	Prof. T. R. Fraser.	Dr Craig and Dr Glison.*	Professor Charteris.	Dr Morton.	In Winter.	...	Professor Davidson.
Midwifery, etc.	Professor Simpson.	Drs Croom, C. Bell, B. Hart, F. Barbour.*	Professor Leishman.	Dr A. Wallace.	Dr James Stirton.	Dr W. L. Reid.	Prof. W. Stephenson.
Medical Jurisprudence and Public Health.	Professor Sir Douglas MacLagan.	Dr Littlejohn.†	Professor Simpson.‡	Dr Lindsay and Dr Christie.	Dr Glaister. P. H. in Winter.	...	Professor M. Hay.
Comparative Anatomy.	Prof. Sir Wm. Turner.	Dr Andrew Wilson.	Professor Young.‡	...	...	...	Professor Struthers.
Practical Physiology, incl. Histology.	Professor Rutherford.	Dr James and Mr J. Hunter.	Professor M'Kendrick.	Dr James Christie.	Dr Barlow.	...	Professor M'William.
Practical Pathology, incl. Histology.	Professor Greenfield.	Dr A. Bruce.	Dr Joseph Coats.	Dr Newman at Royal Infirmary.	Dr Newman.	At Western Infirmary	Professor Hamilton.
Organic and Practical Chemistry.	Professor Crum Brown.	Dr Macadam, Mr King, Mr I. Macadam, Dr Drinkwater.*	Professor J. Ferguson.	Professor Dittmar.	Dr J. M. Milne.	...	Professor Brazier.
Operative Surgery.	Professor Chiene.	Mr Miller, Dr C. W. MacGillivray, Mr C. W. Cathcart, and Mr Caird.*	Professor Macleod.	Dr Dunlop.	Dr W. Macewen.	Dr Knox.	Professor A. Ogston.
Mental Diseases.	Dr Clouston.	Dr J. B. Tuks.	Dr Yellowlees.	...	Dr Alex. Robertson.	...	Dr Reid.
Natural History.	Professor Cosnar Ewart.	Dr A. Wilson, Mr Thomson.	Professor Young.	...	...	...	Professor Nicholson.
Clinical Medicine.	Professors G. Stewart, T. R. Fraser, Greenfield, and Simpson on Diseases of Women.	Drs Muirhead, Brakenridge, Wyllie, Affleck, and H. Croom for Diseases of Women.‡	Prof. M'Call Anderson and Prof. Gairdner.	The Physicians of the Royal Infirmary.		Physicians of Western Infirmary.	...
Clinical Surgery.	Professor Annandale.	Mr John Duncan.	Prof. George Buchanan and Prof. Macleod.	The Surgeons of the Royal Infirmary.		Surgeons of West. Infirmary.	...

In connexion with the University of Edinburgh during the Summer Session, lectures and clinical instruction on Diseases of Children, at Royal Hospital for Sick Children, are given by Dr J. Andrew and Dr J. Carmichael; on Diseases of the Eye by Dr D. Argyll Robertson; and on Comparative Embryology by Mr George Brook.

Operative Surgery is taught during the Summer in Edinburgh by Mr Miller, Dr MacGillivray, Mr Cathcart, and Mr F. M. Caird; and in Glasgow by Professor Macleod, Dr Knox, and Dr Macewen. Instruction in Vaccination is also given at the Royal Public Dispensary, Edinburgh, on Wednesdays and Saturdays at 12, both Summer and Winter, by Dr Husband, and in the Western Dispensary, on Thursdays at 8 o'clock, by Dr Bulest; at the Faculty Hall, Glasgow, on Mondays at 12, by Dr Thomson; and at the Royal Infirmary, Glasgow, on Mondays and Thursdays at 12 o'clock, by Dr Tannahill, and Dr M'Vail, at Western Infirmary, on Mondays at 1 p.m. Medical Psychology and Insanity are taught in Summer by Dr Clouston and Dr J. B. Tuks in Edinburgh, in Glasgow by Dr Yellowlees and Dr Robertson, and in Aberdeen by Dr Reid; Practical Medicine and Medical Diagnosis by Dr Byrom Bramwell in Edinburgh; the Diseases of Children by Drs Underhill and Playfair in Edinburgh; the Diseases of the Eye by Dr D. Argyll Robertson, Dr John Robertson, and Mr George Berry in Edinburgh, Professor A. Dyce Davidson in Aberdeen, and by Dr Thomas Reid, Mr Clark, and Dr Wolfe in Glasgow; the Diseases of the Ear by Dr Kirk Duncanson, and Ear and Throat by Dr M'Bride, in Edinburgh, and of the Ear by Dr Johnston Macfie, Dr Barr, and Dr Walker Downie in Glasgow, and in Aberdeen, Ear and Larynx Diseases, by Dr M'Kenzie Booth; Diseases of the Throat and Nose, by Dr Newman in Glasgow; Diseases of the Skin by Dr Allan Jamieson in Edinburgh, and in Aberdeen by Dr Garden; Dental Surgery by Dr J. C. Woodburn in Glasgow, and Dr Williamson in Aberdeen. Pathology and Morbid Anatomy in Edinburgh by Dr William Russell. Laryngology and Medical Ophthalmology in Edinburgh by Dr John Wyllie. Diseases of the Tropics and Climatology in Edinburgh by Dr R. W. Felkin. Lectures on Public Health are delivered during the Summer Session in Aberdeen by Professor Hay.

* These are not conjoint courses, but separate ones by the gentlemen named.

† This is a joint course.

‡ Dr Littlejohn gives courses during both the Winter and Summer Sessions.

‡ In Winter.

For additional Summer Courses on special subjects, see the Prospectus of each School.

LIST OF HOSPITALS, DISPENSARIES, ETC., IN CONNEXION WITH THE MEDICAL SCHOOLS OF SCOTLAND.

EDINBURGH.

ROYAL INFIRMARY, including LOCK HOSPITAL. Upwards of 650 Beds. Visits daily from 12 till 2 P.M. Consulting Physicians, Dr D. R. Haldane, Dr Geo. W. Balfour, and Prof. Sir Douglas MacLagan; Dr Alex. Keiller (for Diseases of Women). Physicians, Professors Grainger Stewart, Fraser, and Greenfield; Drs Claud Muirhead, D. J. Brakenridge, John Wyllie, and J. O. Affleck; Professor Simpson and Dr J. Halliday Croom (for Diseases of Women). Assistant Physicians, Drs Andrew Smart, Alex. James, and Byrom Bramwell; Drs D. Berry Hart and A. H. F. Barbour (for Diseases of Women). Extra Physician, Dr Allan Jamieson (for Diseases of the Skin). Consulting Surgeons, Dr Dunsmure and Dr Gillespie. Surgeons, Professors Annandale and Chiene, Mr Joseph Bell, Mr John Duncan, and Mr A. G. Miller. Extra Surgeons, Dr P. H. Watson; Dr Thomas Keith (for Ovarian Diseases). Assistant Surgeons, Drs P. H. Maclaren, Chas. W. MacGillivray, J. M. Cotterill, Chas. W. Cathcart, Francis M. Caird, and Mr Skene Keith (for Ovarian Diseases). Ophthalmic Surgeons, Dr Argyll Robertson and Dr George A. Berry. Dental Surgeon, Dr John Smith. Surgeon to the Ear and Throat Department, Dr P. M'Bride. Pathologists, Drs Woodhead and Alex. Bruce.

CONVALESCENT HOUSE, Corstorphine. Surgeon, Dr MacGillivray.

CHALMERS HOSPITAL FOR THE SICK AND HURT (Public and Private Wards). 24 Beds for medical and surgical patients. Physician, Dr Halliday Douglas. Surgeon, Dr P. H. Watson.

ROYAL MATERNITY AND SIMPSON MEMORIAL HOSPITAL. 30 Beds; from 200 to 300 in-patients and about 600 out-patients yearly. Consulting Physicians, Drs Moir and Graham Weir. Consulting Surgeon, Dr Dunsmure. Physicians, Dr Keiller, Professor Simpson, Drs Halliday Croom and Underhill. Assistant Physicians, Drs Berry Hart and Freeland Barbour. Secretary and Treasurer, Andrew Scott, C.A.

ROYAL HOSPITAL FOR SICK CHILDREN. 80 Beds; number of patients for 1885, 7205. Consulting Physicians, Dr Graham Weir, Dr Geo. W. Balfour, Dr R. Peel Ritchie, and Professor T. Grainger Stewart. Consulting Surgeon, Professor Annandale. Pathologist, Dr G. L. Woodhead. Ordinary Physicians, Dr J. Andrew, Dr C. E. Underhill, Dr Jas. Carmichael, and Dr John Playfair. Extra Physicians, Dr Burn Murdoch, Dr J. W. B. Hodsdon, and Dr M. Johnstone. Surgeon-Dentist, Dr John Smith. Ophthalmic Surgeon, Dr Argyll Robertson. Resident Physician, Drs D. M. Moir and J. Grant Fletcher.

ROYAL PUBLIC DISPENSARY AND VACCINE INSTITUTION. About 12,000 patients annually. Consulting Physician, Dr Haldane. Consulting Surgeon, Dr Littlejohn. Medical Officers, Drs W. Husband, D. Wilson, Andrew, Cotterill, Spence, P. Young, A. Black, Caird, Dunlop, Webster, and Kennedy. Consulting Physicians-Accoucheur, Drs Keiller and Charles Bell. Midwifery and Diseases of Women, Drs Andrew and Young. Vaccination, Dr W. Husband. Apothecary, Mr W. Duncan. Clinique daily at 3 P.M. Vaccination, Wednesday and Saturday, 12 noon. Midwifery and Diseases of Women, Tuesday and Friday, 1 P.M. Laboratory, 3 P.M. and 7 P.M. Secretary, R. C. Gray, S.S.C. James Andrew, M.D., Secretary to the Medical Officers.

NEW TOWN DISPENSARY. About 10,000 patients annually. Medical Officers, Drs Gibson, Wood, Johnston, Hodsdon, Philip, Russell, and Milligan. Acting Physicians-Accoucheur, Drs Dunsmure, jun., and Brewis. Superintendent of Vaccination, Dr Cadell. Diseases of the Ear and Throat, Drs M'Bride and Blaikie. Diseases of the Eye, Dr Caverhill. Diseases of Women,

Dr Brewis. Clinique daily at 3 P.M. Vaccination on Tuesdays and Fridays at 12.

THE EDINBURGH PROVIDENT DISPENSARY, Marshall Street. About 8000 patients annually. Consulting Physician, Dr Andrew Smart. Dental Surgeon, R. Urquhart. Medical Officers, Dr Charles Bell, Dr Robertson, Dr F. Troup, Dr H. Wylie, Dr Price. Assistant Medical Officer, A. A. Matheson, M.D. R. Urquhart, Secretary. Vaccination (Tuesday and Friday at 1 o'clock), Dr C. Bell. Diseases of Women and Children, Dr C. Bell (Tuesday and Friday at 1 o'clock). Surgical Instrument Maker, A. Young, North Bridge and Forrest Road.

WESTERN DISPENSARY, Chalmers Institute, Ponton Street, Fountain-bridge. Chairman, James Simson. Acting Committee, Miss Chalmers, Miss M. Douglas, Mrs Owen, S. Henderson, Stair Kerr, Dr Bruce Bremner, A. Dickison, Dr Pringle, A. McLellan. Consulting Physician, Dr A. Peddie. Consulting Surgeon, Dr Joseph Bell. Consulting Physician for Diseases of Women, Dr Croom. Physicians, Drs Murdoch Brown, Bruce, Woodhead, and D. Noel Paton. Assistant Physician, Dr William Hunter. Surgeon, Mr Macdonald Brown, F.R.C.S. Diseases of the Throat, Drs Hunter Mackenzie and Maxwell Ross. Diseases of Women, Dr Milne Murray. Vaccination Officer, Dr J. B. Buist. Midwifery, Dr Barbour. Secretary to Medical Board, Dr J. Murdoch Brown. Treasurer, Mrs Macnider, 31 Stafford Street. Open daily from 3.45 to 4.45 P.M. Diseases of Women, Monday, 4.45 P.M. Diseases of Throat and Ear, Monday, 4 P.M. Vaccination, Thursdays, 3 P.M. Special Surgical Cases, Wednesdays, 4 P.M.

ROYAL ASYLUM FOR THE INSANE. About 850 patients, about 300 of whom are private patients. Physician, Dr Clouston.

EYE, EAR, AND THROAT INFIRMARY, 6 Cambridge Street, Lothian Road, Edinburgh. Consulting Surgeon, Joseph Bell, F.R.C.S. Surgeons, J. J. Kirk Duncanson, M.D., F.R.C.P.E., G. Hunter Mackenzie, M.D., and J. Maxwell Ross, M.A., F.R.C.S. Eye Clinique daily at 1 P.M. Ear Clinique on Mondays, Thursdays, and Saturdays, at 12 noon. Throat Clinique on Tuesdays and Fridays at 4 P.M.

EYE DISPENSARY, 54 Cockburn Street. About 2000 patients annually. Surgeons, Mr Berry and Mr Caverhill. Assistant Surgeon, Mr Mackay. Open Mondays, Wednesdays, and Fridays, at 1 P.M.

DENTAL HOSPITAL AND SCHOOL, 30 Chambers Street. Consulting Physician, Alexander Peddie, M.D., F.R.C.P.E. Consulting Surgeon, Joseph Bell, F.R.C.S.E. Consulting Dental Surgeon, John Smith, M.D., LL.D., V.P.R.C.S.E. Lecturers, Messrs Andrew Wilson, W. Bowman Macleod, and G. W. Watson. Dental Surgeons, Messrs C. Matthew, W. Bowman Macleod, M. Finlayson, A. Wilson, M. Macgregor, G. W. Watson, and Edwin A. Cormack. Assistant Dental Surgeons, J. S. Durward, James Mackintosh, James Lindsay, W. Forrester, John S. Amoores, and J. G. Munro. Tutorial Dental Surgeon, F. Page. Dean and Hon. Treasurer, W. Bowman Macleod. Hon. Secretary, Lindsay Mackersy, W.S., 3A North St David Street. Daily, 9 to 10 A.M. Average number of patients, 6000 per annum.

SCHOOL OF MEDICINE, Marshall Street, Nicolson Sq.—See Advertisement.

GLASGOW.

ROYAL INFIRMARY. 542 Beds. Visit daily at 9 A.M. Dispensary Hour, 2 P.M. Physicians, Drs Wood Smith, Perry, Alex. Robertson, and J. W. Anderson. Surgeons, Drs Macewen, Dunlop, Clark, Knox, Lothian, and Wm. J. Fleming. Gynæcologist, Dr Stirton. Aural Surgeon, Dr Macfie. Dental Surgeon, Dr Woodburn. Assistant Physicians, Drs Dougall, Middleton, Henderson, Black, Macphée, and J. L. Steven. Assistant Surgeons, Drs

Barlow, Adams, Muir, Shaw, Whitson, and Macintyre. Diseases of the Skin, Dr Provan. Diseases of the Throat, Dr Newman. Pathologist, Dr Newman. Vaccinator, Robert Tannahill, M.D. Electrician, Dr Macintyre. M. Thomas, M.D., Superintendent.

WESTERN INFIRMARY. This Hospital contains about 400 Beds for Medical and Surgical patients. There are Wards for Skin Diseases and Diseases of Women, and an out-door Midwifery department. Physicians, W. T. Gairdner, M.D., T. McCall Anderson, M.D., James Finlayson, M.D., Gavin P. Tennent, M.D. Diseases of Women, W. Leishman, M.D. Surgeons, George H. B. Macleod, M.D., George Buchanan, M.D., A. Patterson, M.D., Hector C. Cameron, M.D. Assistant-Physicians, Joseph Coats, M.D., Jas. Christie, M.D., and David C. McVail, M.D. Out-door Physicians-Accoucheur, Robert Kirk, M.D., W. L. Reid, M.D., M. Cameron, M.D. Dispensary Physicians, S. Gemmel, M.D., John Alexander, M.D., Wm. G. Dun, M.D. Dispensary Surgeons, J. C. Renton, M.B., Geo. T. Beatson, M.D., David Newman, M.D. Extra Dispensary Physicians, R. Stevenson Thomson, M.B., George Dickson, M.D. Extra Dispensary Surgeons, A. E. Maylard, M.S., Jas. Parker, M.D. Pathologist, Joseph Coats, M.D. Pathological Chemist, C. O. Hawthorne, M.D. Dispensary Surgeon for Diseases of the Ear, Thomas Barr, M.D. Dispensary Physicians for Diseases of the Throat, Joseph Coats, M.D., and John Alexander, M.D. Hon. Consulting Ophthalmic Surgeon, Thomas Reid, M.D. Dental Surgeon, James R. Brownlie, L.D.S. Medical Superintendent, A. W. Russell, A.M., M.B. Lady Superintendent, Miss E. Clyde. Secretary, Henry Johnston, 125 Buchanan Street. The hour of visit is 9 A.M. Operating days, Wednesday and Saturday. The Dispensary for out-patients is open daily at 2 P.M.

LOCK HOSPITAL, 41 Rottenrow Street. 80 Beds. Medical Officers, Drs James Dunlop and A. Patterson. Superintendent, P. Condra. Treasurer, T. D. Findlay. Secretary, Robert Young.

MATERNITY OR LYING-IN HOSPITAL AND DISPENSARY. 36 Beds; in-patients, 328; out-patients, 1316. Consulting Surgeon, Dr George Buchanan, Senior Consulting Physician, Professor Leishman. Consulting Physician, Dr Hugh Miller. Obstetric Physicians, Drs Samuel Sloan and W. L. Reid. Assistant Obstetric Physicians, Drs William Muir and Archibald Sloan. Pathologist, Dr David Newman. Out-door Physicians, Drs J. Dunlop, T. F. Gilmour, Malcolm Black, John Ritchie, Alexander Jamieson, and John Conway.

GLASGOW ROYAL ASYLUM, GARTNAVEL. About 500 patients. Physician-Superintendent, Dr David Yellowlees. Lectures on Mental Diseases during Summer, at the University and the Asylum.

EYE INFIRMARY. 78 Beds (857 house patients), 13,545 patients in all annually. Senior Surgeon, Thomas Reid, M.D. Surgeons, Thomas S. Meighan, M.D., Henry E. Clark, M.R.C.S., and J. Crawford Renton, M.D. Assistant Surgeons, D. N. Knox, M.B., J. Macfie, M.D., and A. Freeland Fergus, M.B. House Surgeon, William Wallace, M.B., C.M. Consulting Surgeon, George Buchanan, M.D. Joint-Secretaries, George Black and William George Black.

DISPENSARY FOR SKIN DISEASES, 8 Elmbank Street. Physician, Professor McCall Anderson. Open Mondays and Thursdays at 4 P.M., for out-door patients. This Institution is in connexion with the Wards for Skin Diseases in the Western Infirmary, to which the more important cases are sent.

OPHTHALMIC INSTITUTION, 126 West Regent Street. Consulting Physician, Dr S. J. Moore. Acting Surgeon, Dr J. R. Wolfe. Acting Physician, Dr J. S. Cumming. Assistant Surgeons, Dr J. McGregor Robertson and Dr A. T. Thomson. Secretary, Henry Johnston, 125 Buchanan Street. Open daily from 1 to 3 P.M. A Course of Lectures and Clinical Instruction during the Winter and Summer Sessions.

GLASGOW HOSPITAL AND DISPENSARY FOR DISEASES OF THE EAR, 28 Elmbank Crescent. 12 Beds. Hour of visit to the Hospital, 2 P.M. Out-patients seen at 2 P.M. on Mondays, Tuesdays, Thursdays, and Fridays. Number of cases treated annually, 3600. During the Winter and Summer Sessions a Course of Practical Instruction in the Treatment of Ear Disease is given to the Students attending the Clinique. Senior Consulting Physician, Prof. W. T. Gairdner. Senior Consulting Surgeon, Dr James Morton. Pathologist, Dr Joseph Coats. Consulting Ophthalmic Surgeon, Dr Thomas Reid. Consulting Dental Surgeon, Dr J. C. Woodburn. Physicians, Drs A. K. Irvine, A. L. Kelly, and J. Gardiner. Surgeon and Lecturer, Dr Thomas Barr.

ABERDEEN.

ROYAL INFIRMARY. Upwards of 250 Beds. Visits daily at 12 o'clock. Physicians, Drs Smith-Shand, Beveridge, and Fraser. Surgeons, Drs A. Ogston, Will, Garden, and Hall. Ophthalmic Surgeon, Dr Davidson. Pathologist, Dr Rodger. Chloroformist, Dr P. Blaikie Smith. Dental Surgeon, Dr Williamson. Superintendent, Frances Rachel Lumsden. Treasurer, William Carnie.

GENERAL DISPENSARY, LYING-IN AND VACCINE INSTITUTION. 7900 patients annually. Open daily at 10 o'clock A.M. except Sundays. Medical Attendants and Vaccinators, Drs Brander, Booth, Watt, Ruxton, Gordon, and Edmond. Surgeon Dentist, W. P. Robertson. Secretary, John P. Cumine.

CHILDREN'S HOSPITAL. Physicians, Drs Stephenson and Garden. Junior Physician, Dr Macgregor. Clinical instruction daily at 11 o'clock.

LUNATIC ASYLUM. Above 570 patients. Medical Superintendent, Dr Reid. Consulting Physician, Dr Jamieson. Treasurer, William Carnie.

EYE INSTITUTION, General Dispensary Buildings, Guestrow. Open three days in the week at 2.30 P.M. Clinical Instruction on Diseases of the Eye and the use of the Ophthalmoscope. Average, 600 patients annually.

ARMY MEDICAL DEPARTMENT.

WAR OFFICE, LONDON.

SCHEDULE OF QUALIFICATIONS NECESSARY FOR CANDIDATES DESIROUS OF OBTAINING COMMISSIONS IN THE ARMY MEDICAL STAFF, WITH THE CONDITIONS OF SERVICE.

1. Every candidate for a commission in the Army Medical Staff must be 21 years of age and not over 28 years at the date of commencement of the competitive examination. He must produce an extract from the register of his birth, or, in default, a declaration, made before a magistrate by one of his parents or guardians, giving his exact age. He must produce a recommendation from some person of standing in society—not a member of his own family—to the effect that he is of regular and steady habits, and likely in every respect to prove creditable to the Department if a commission be granted; and a certificate of moral character from the parochial clergyman, if possible.

2. The candidate must sign a declaration upon honour that both his parents are of unmixed European blood, and that he labours under no mental or constitutional disease, or hereditary tendency thereto, nor any imperfection or disability that can interfere with the efficient discharge of the duties of a medical officer in any climate: also that he does not hold, and has never held, any commission or appointment in the public services. His physical fitness will be determined by a Board of Medical Officers, who are required to certify that his vision is sufficiently good to enable him to perform any surgical

operation without the aid of glasses. A moderate degree of myopia will not be considered a disqualification, provided it does not necessitate the use of glasses during the performance of operations, and that no organic disease of the eyes exists. The Board must also certify that he is free from organic or other disease, and from constitutional weakness, or other disability of any kind likely to unfit him for military service in any climate.

3. Certificates of age, registration of diplomas, etc., and of character, must accompany the declaration when signed and returned.

4. Candidates will be examined by the Examining Board in the following compulsory subjects, and the highest number of marks attainable will be distributed as follows:—*a.* Anatomy and Physiology, 1000; *b.* Surgery, 1000; *c.* Medicine, including Therapeutics, the Diseases of Women and Children, 1000; *d.* Chemistry and Pharmacy, and a practical knowledge of drugs, 1000. [*N.B.*—The examination in Medicine and Surgery will be in part practical, and will include operations on the dead body, the application of surgical apparatus, and the examination of Medical and Surgical patients at the bedside. The examination in Chemistry will be limited to the elements of the science, and to its application to medicine, pharmacy, and practical hygiene.] No candidate shall be considered eligible for the Army Medical Staff who shall not have obtained at least *one-third* of the marks obtainable in each of the above *compulsory subjects*.

5. Voluntary subjects for examination. Candidates may be examined in the following voluntary subjects, for which the maximum number of marks will be—French and German (150 each), 300; Natural Sciences, 300. A number less than one-third of the marks obtainable in each of these voluntary subjects will not be allowed to count in favour of the candidate who has qualified in the compulsory subjects. The knowledge of Modern Languages being considered of great importance, all intending competitors are urged to qualify in French and German. The Natural Sciences will include Comparative Anatomy, Zoology, Natural Philosophy, Physical Geography, and Botany, with special reference to *Materia Medica*.

6. The appointments announced for competition will be filled up from the list of qualified candidates arranged in the order of merit, as finally determined by the total number of marks each has obtained in both the compulsory and voluntary subjects.

7. After passing this examination, every successful candidate will be required to attend one course of practical instruction at the Army Medical School as a Surgeon on probation on—(1) Hygiene; (2) Clinical and Military Medicine; (3) Clinical and Military Surgery; (4) Pathology of Diseases and Injuries incident to Military Service.

8. All Surgeons on probation will be required to conform to such rules of discipline as the Senate may from time to time enact, and provide themselves with uniform, viz., the regulation undress and mess uniform of a surgeon, but without sword.

9. They will be required to attend the Medical Staff Mess at Netley, and to conform to the Rules and Regulations thereof.

APPOINTMENT.

Every candidate for appointment to the Medical ranks of the Army Medical Staff must possess two diplomas or licenses, recognised by the General Medical Council, one to practise Medicine, and the other Surgery, and must be registered under the Medical Act in force in the United Kingdom at the time of his appointment.

A public and open competition will be held twice in the year for the admission of qualified candidates as probationers. The number of appointments so competed for will be not less than half of the number of vacancies which shall have arisen in the last completed half-year ending on the 30th June or 31st December.

Not less than half the number of vacancies will be filled up by competition, and it will be competent for the Secretary of State for War to fill up the remaining number from such qualified candidates as may be proposed by the governing bodies of Public Schools of Medicine in the United Kingdom or in the Colonies as he may think proper. Every candidate so proposed must be certified by the governing body proposing him to be duly qualified according to a standard laid down by the Secretary of State, and shall be approved by the Director-General.

The Secretary of State for War will from time to time fix the order of precedence and the proportion in which the several Schools of Medicine shall be offered the nomination of candidates.

A Surgeon on probation, on being so nominated, will be sent to some large station for instruction in Ambulance and Medical Staff Corps duties, until the commencement of the next course of study at the Army Medical School. After going through such course at the Army Medical School as the Secretary of State shall decide, the Surgeon on probation, after passing a qualifying examination in the military medical subjects taught there, and satisfying the Director-General that he is a person of proper skill, knowledge, and character, for permanent appointment in the Army Medical Staff, will be commissioned as Surgeon.

The Surgeons on probation who pass out of the Army Medical School at one qualifying examination will take precedence among each other as Surgeons, as follows:—(a.) Those appointed on nomination according to their date of joining on probation. (b.) Those appointed by competition according to the last day of the competitive examination, and in the order of merit, as determined by the combined results of the competitive and qualifying examinations, with priority over any joining under sub-section (a) on the last day of the competitive examination.

A Surgeon's commission will bear the date of the day of his passing out of the Army Medical School.

RANK AND PAY.

The ranks and daily rates of pay of the officers of the Army Medical Staff are as follows:—Surgeon-General £2, 15s.; Deputy Surgeon-General, £2; Brigade Surgeon, £1, 10s., after five years in the rank, £1, 13s.; Surgeon-Major, £1, after fifteen years' service £1, 2s. 6d., after twenty years' service £1, 5s., after twenty-five years' service £1, 7s. 6d.; Surgeon, £200 a year, after five years' service £250, after ten years' service 15s. daily. Surgeon on probation 8s. Charge pay: the principal medical officer of an army in the field, consisting of 10,000 men and upwards, £1 daily; of 5000 men and upwards, 15s. daily; of less than 5000, 10s. daily. The principal medical officer of a colony where the number of commissioned officers and enlisted men is 1500 and upwards, 5s. daily.

The pay of medical officers is issued monthly in arrear.

The relative rank of officers of the Army Medical Staff is as follows:—I. A Director-General and Surgeon-General rank as Major-General. II. A Deputy Surgeon-General ranks as Colonel. III. A Brigade Surgeon ranks as Lieutenant-Colonel. IV. A Surgeon-Major ranks as Major; after twenty years' service as Surgeon-Major he ranks as Lieutenant-Colonel. V. A Surgeon ranks as Captain. VI. A Surgeon on probation ranks as Lieutenant.

ARMY MEDICAL SCHOOL.

ROYAL VICTORIA HOSPITAL, NETLEY.

President of the Senate.—Sir Thomas Crawford, M.D., K.C.B., Director-General of the Army Medical Department.

Members of the Senate.—Sir J. Fayrer, M.D., K.C.S.I., F.R.S., Physician to the Council of India; Surgeon-General Sir T. Longmore, C.B., Professor of

Military Surgery; Dep. Surgeon-General David B. Smith, M.D., F.R.C.P., Professor of Military Medicine; William Aitken, M.D., F.R.S., Professor of Pathology; F. S. B. F. De Chaumont, M.D., F.R.C.S.E., F.R.S., Surgeon-Major, Professor of Military Hygiene; The Principal Medical Officer, Royal Victoria Hospital, Netley.

Assistant Professors.—Surgeons-Major C. H. Y. Godwin, J. F. Beattie, M.D.; Surgeons A. M. Davies and H. S. McGill.

Candidates for Commissions in the Army, and in the Queen's Indian Service, proceed to Netley after passing the Examination at London. At Netley they attend the Medical and Surgical Practice of the Royal Victoria Hospital, and learn the system and arrangements of Military Hospitals. During four months they attend the lectures given by the Professors and Assistant-Professors, and go through a course of practical instruction in the Hygienic and Pathological Laboratories. The lectures and practical instruction are intended to explain the specialities of Military Medical Practice, attention being directed to gunshot and other wounds, surgical arrangements in the field during action and sieges, means of transport, field hospitals, tropical diseases and their means of investigation, service in India and in the various colonies, the sanitary arrangements in peace and war, and the means of carrying out the sanitary regulations. Every opportunity is taken of practising operations on the dead body, and practical points of a like kind.

INDIAN MEDICAL SERVICE.

REGULATIONS FOR THE EXAMINATION OF CANDIDATES FOR THE APPOINTMENT, OF SURGEON IN HER MAJESTY'S INDIAN MEDICAL SERVICE.

1. *Limits of Age.*—All natural-born subjects of Her Majesty, between 21 and 28 years of age at the date of the examination, and of sound bodily health, may be candidates. They may be married or unmarried. They must possess a Diploma in Surgery, or a license to practise it, as well as a Degree in Medicine, or a license to practise it in Great Britain or Ireland.

2. *Declaration to be submitted.*—They must subscribe and send in to the Military Secretary, India Office, Westminster, so as to reach that address at least a fortnight before the date fixed for the Examination, a declaration according to a prescribed form.

3. This declaration must be accompanied by the following documents:—

a. *Proof of age*, either by extract from the register of the parish in which the candidate was born, or, where such extract is unattainable, by his own declaration (pursuant to the Act 5 & 6 Will. IV., c. 62), form of which can be obtained at the India Office. A certificate of baptism which does not afford proof of age will be useless.

b. A recommendation from some person of standing in society—not a member of his own family—to the effect that he is of regular and steady habits, and likely in every respect to prove creditable to the service if admitted; and a certificate of moral character from a magistrate, or a minister of the religious denomination to which the candidate belongs.

c. *A certificate of registration*, in accordance with the Medical Act of 1858, of the degrees, diplomas, and licenses possessed by the candidate.

4. *Physical Examination.*—The physical fitness of each candidate will be determined previous to examination by a Board of Medical Officers, who are required to certify that his vision is sufficiently good to enable him to perform any surgical operation without the aid of glasses. A moderate degree of myopia will not be considered a disqualification, provided it does not necessitate the use of glasses during the performance of operations, and that no organic disease of the eyes exists.

Every candidate must also be free from all other organic disease and from constitutional weakness, or other disability likely to unfit him for military service in India.

5. *Subjects for Examination.*—On producing the foregoing qualifications, the candidate will be examined by the Examining Board in the following compulsory subjects, and the highest number of marks attainable will be distributed as follows :—

	Marks.
a. Anatomy and Physiology, ...	1000
b. Surgery, ...	1000
c. Medicine, including Therapeutics, the Diseases of Women and Children, ...	1000
d. Chemistry and Pharmacy, and a practical knowledge of Drugs, 1000	

(The examination in Medicine and Surgery will be in part practical, and will include operations on the dead body, the application of surgical apparatus, and the examination of medical and surgical patients at the bedside.)

The examination in Chemistry will be limited to the elements of the science, and to its application to medicine, pharmacy, and practical hygiene.

No candidate shall be considered eligible who shall not have obtained at least *one-third* of the marks obtainable in each of the above *compulsory subjects*.

6. *Voluntary Subjects.*—Candidates may be examined in the following voluntary subjects, for which the maximum number of marks obtainable will be :—

	Marks.
French, German, and Hindustani (150 each), ...	450
Natural Sciences, ...	300

The Natural Sciences will include Comparative Anatomy, Zoology, Natural Philosophy, Physical Geography, and Botany, with special reference to *Materia Medica*.

A number less than one-third of the marks obtainable in any of these *voluntary subjects* will not be allowed to count in favour of a candidate who has qualified in the *compulsory subjects*.

The knowledge of modern languages being considered of great importance, all intending competitors are urged to qualify in French and German.

7. The appointments announced for competition will be filled up from the list of qualified candidates arranged in order of merit, as finally determined by the total number of marks each has obtained in both the compulsory and voluntary subjects.

The Examiners in London will prepare a list in order of merit, with the marks affixed in the different subjects, to be transmitted to the Director-General and communicated to the Professors of the Army Medical School. If any candidate is found to be deficient in any particular subject, this shall be stated, in order that he may receive special instruction on the point at Netley.

8. *Course at Netley.*—After passing this examination the successful candidates will be required to attend one entire course of practical instruction at the Army Medical School, as Surgeons on probation, in—

- (1.) Hygiene.
- (2.) Clinical and Military Medicine.
- (3.) Clinical and Military Surgery.
- (4.) Pathology of Diseases and Injuries incident to Military Service.

These courses are to be of not less than four months' duration; but candidates who have already gone through a course at Netley as candidates for the Army or Navy Medical Service may, if thought desirable, be exempted from attending the School a second time.

9. *Pay and Uniform while at Netley.*—During the period of residence at the Army Medical School, each candidate will receive an allowance of 8s. per diem with quarters, or, when quarters are not provided, with the usual lodging and fuel and light allowances of a subaltern, to cover all costs of maintenance; and he will be required to provide himself with uniform (*viz.*, the regulation undress uniform of a Surgeon of the British Service, but without the sword).

10. All candidates will be required to conform to such rules of discipline as the Senate may from time to time enact.

11. *Examination at Netley.*—At the conclusion of the course, candidates will be required to pass an examination on the subjects taught in the School. The examination will be conducted by the Professors of the School.

The Director-General, or any Medical Officer deputed by him, may be present and take part in the examination. If the candidate give satisfactory evidence of being qualified for the practical duties of an Army Medical Officer, he will be eligible for a Commission as Surgeon.

12. *Position on List of Surgeons, how determined.*—The position of the candidates on the list of Surgeons will be determined by the combined results of the preliminary and of the final examinations, and, so far as the requirements of the service will permit, they will have the choice of Presidency in India according to their position in that list.

N.B.—There will be an examination for at least 25 appointments in February 1887. The exact date will be notified in the newspapers when fixed.

**MEMORANDUM REGARDING THE PAY, ETC., OF MEDICAL OFFICERS
APPOINTED TO HER MAJESTY'S INDIAN FORCES.**

Passage to India.—Surgeons on appointment will, if possible, be provided with passage to India by troop-ship; but when troop-ship accommodation is not available, passage at the public expense will be provided by steamer, or a passage allowance will be granted, if preferred. A charge for messing during the voyage will be made at the rate of 2s. a day. This payment will not include the cost of liquors, which will be charged for as extras.

Pay previous to Embarkation.—The rate of pay drawn by Surgeons from the date of passing the final examination at the Army Medical School until arrival in India will be 10s. a day.

Pay at the above rate will be issued in this country up to the date of embarkation, and an advance of two months' pay at the same rate will also be made prior to embarkation.

Pay and Allowances when in India.—Officers appointed to the Indian Medical Service will receive pay in India according to the following scale when not holding an appointment carrying higher pay:—

Rank.	Years' Service.	Pay and Allowances per Mensem.		
Brigade Surgeon and } Surgeon-Major. }	25	R. 888	A. 12	P. 0
" . . .	20	852	3	7
" . . .	15	677	6	11
" . . .	12	640	14	6
Surgeon . . .	10	451	14	5*
" . . .	6	433	10	2*
" . . .	5	335	12	2*
" . . .	under 5	317	8	0*

On first appointment they will only come into receipt of these allowances from the date of their arrival in India.

The monthly salaries of officers holding the principal administrative appointments and substantive military charges of the Indian Medical Service receive, at present, the following consolidated salaries:—Surgeon-General, Bengal, Rs. 2700; Madras, Rs. 2500; Bombay, Rs. 2500; Deputy Surgeon-General, from Rs. 2250 to Rs. 1800; Brigade Surgeon or Surgeon-Major, of twenty years' service and upwards, in substantive charge of a Native regiment, Rs. 1000, with Rs. 90 horse allowance in Cavalry regiments; Brigade Surgeon or Surgeon-Major in substantive charge of a Native regiment, Rs. 800, with

* When not receiving any staff allowance.

Rs. 90 horse allowance in Cavalry regiments; Surgeon, above five years' full-pay service, in substantive charge of a Native regiment, Rs. 600, with Rs. 60 horse allowance in Cavalry regiments; Surgeon, under five years' full-pay service, in substantive charge of a Native regiment, Rs. 450, with Rs. 60 horse allowance in Cavalry regiments. The salaries of other substantive medical appointments in the Civil and Military Departments are consolidated, and vary from Rs. 1800 to Rs. 400 per mensem. Qualified officers of the Medical Service are also eligible for appointments in the Assay Department. The salaries of these appointments are from Rs. 600 to Rs. 2250 per mensem. Medical officers are required to perform two years' regimental duty in India before they can be considered eligible for civil employment.

Retiring Pensions and Half-Pay.—Officers of the Indian Medical Service will be allowed to retire on the following scale of pension, on completion of the required periods of service :—After thirty years' service for pension, £700; after twenty-five years' service for pension, £500; after twenty years' service for pension, £365; after seventeen years' service for pension, £292. A Surgeon-General, after five years' active employment in India in that grade, will be entitled to retire upon a pension of £350 per annum, in addition to that to which he may be entitled under the above scale. A Deputy Surgeon-General will, after five years' active employment in India in that grade, be entitled to retire upon a pension of £250 per annum, in addition to the pension to which he may be entitled under the above scale.

With a view to maintain the efficiency of the service, all medical officers of the rank of Brigade Surgeon and Surgeon-Major shall be placed on the Retired List when they shall have attained the age of fifty-five years, and all Surgeons-General and Deputy Surgeons-General when they shall have attained the age of sixty years. In any special case, where it would appear to be for the good of the service that the officer should continue in employment, he may be so continued, subject in each case to the sanction of the Secretary of State for India in Council.

The widows and families of medical officers are also entitled to pensions from the Indian Service Family Pension Fund, to which all Surgeons must, as a condition of their appointment, subscribe from the date of their arrival in India.

NAVY MEDICAL DEPARTMENT.

Admiralty, Whitehall, London, S. W.

REGULATIONS FOR ENTRY OF CANDIDATES FOR COMMISSIONS IN THE MEDICAL DEPARTMENT OF THE ROYAL NAVY.

1. Every candidate for admission into the Medical Department of the Royal Navy must be not under 21 nor over 28 years of age on the day of the commencement of the competitive examination. He must produce an extract from the register of the date of his birth; or, in default, a declaration made before a magistrate, from one of his parents or other near relative, stating the date of birth. He must also produce a certificate of moral character, and a recommendation signed by a clergyman or magistrate to whom he has been for some years personally known, or by the president or senior professor of the college at which he was educated.

2. He must be registered, under the Medical Act in force, as possessing two diplomas or licenses recognised by the General Council, one to practise medicine and the other surgery in Great Britain and Ireland.

3. He must sign a declaration that he is a British subject, the son of parents of unmixed European blood; that he labours under no mental or constitutional disease or weakness, or any other imperfection or disability which may interfere with the most efficient discharge of the duties of a medical officer in any climate; and that he does not hold, and has never held, any commission or appointment in the public services.

He must also declare his readiness to engage for general service at home or abroad as required.

He must be free from organic or other disease, and his physical fitness will be determined by a board of medical officers, who are to certify that his vision comes up to the required standard, which will be ascertained by the use of Snellen's test types.

The certificates of registration, character, and birth must accompany the declaration, which is to be filled up and returned as soon as possible, addressed as above.

4. Candidates will be examined by the Examining Board in the following compulsory subjects, and the highest number of marks attainable will be distributed as follows:—Anatomy and Physiology (1000 marks); Surgery (1000 marks); Medicine, including Therapeutics and the Diseases of Women and Children (1000 marks); Chemistry and Pharmacy, and a practical knowledge of Drugs (1000 marks). (The examination in Medicine and Surgery will be in part practical, and will include operations on the dead body, the application of Surgical Apparatus, and the examination of Medical and Surgical patients at the bedside.)

No candidate shall be considered eligible who shall not have obtained at least *one-third* of the marks obtainable in each of the above *compulsory subjects*.

5. Candidates may be examined in the following voluntary subjects, for which the maximum number of marks obtainable will be:—French and German (150 each), 300 marks; Natural Sciences, 300 marks. A number less than one-third of the marks obtainable in each of these *voluntary subjects* will not be allowed to count in favour of the candidate who has qualified in the *compulsory subjects*.

The knowledge of modern languages being considered of great importance, all intending competitors are urged to qualify in French and German.

The Natural Sciences will include Comparative Anatomy, Zoology, Natural Philosophy, Physical Geography, and Botany, with special reference to *Materia Medica*.

6. The appointments announced for competition will be filled up from the list of qualified candidates arranged in the order of merit as finally determined by the total number of marks each has obtained in both the compulsory and voluntary subjects.

7. Successful candidates, immediately after passing the examination, will receive Commissions as Surgeons in the Royal Navy, and will undergo a course of practical instruction in Naval Hygiene, etc., at Haslar Hospital.

The full and half-pay per day of Naval Medical Officers is in accordance with the following scale:—**FULL-PAY:** Surgeon—On entry, 11s. 6d.; after 4 years' full-pay service, 13s. 6d.; after 8 ditto, 15s. 6d. Staff Surgeon—On promotion, £1, 1s.; after 4 years' full-pay service in rank, £1, 4s. Fleet Surgeon—On promotion, £1, 7s.; after 4 years' full-pay service in rank, £1, 10s.; after 8 ditto, £1, 13s. Deputy Inspector General, £2, 2s. Inspector General, £2, 15s. On first appointment to the service, medical officers will receive full pay from date of appointment, but subject to the provisions of Art. 1255, clause 2, of the Queen's Regulations, 1879. **HALF-PAY:** Surgeon—Under 2 years' full-pay service, 6s.; after 2 years' full-pay service, 7s.; after 4 ditto, 8s.; after 6 ditto, 9s.; after 8 ditto, 10s.; after 10 ditto, 11s. Staff Surgeon—On promotion, 12s.; after two years' full-pay service in rank, 13s.; after 4 ditto, 14s.; after 6 ditto, 15s. Fleet Surgeon—On promotion, 17s.; after two years' full-pay service in rank, 18s.; after 4 ditto, 19s.; after 6 ditto, £1. Deputy Inspector General—On promotion, £1, 5s.; after 2 years' full-pay service in rank, £1, 7s.; after 4 ditto, £1, 9s. Inspector General, £1, 18s.

The following is a copy of the Papers set for the examination of Candidates for Her Majesty's Army, Indian, and Naval Medical Services, August 1886:—

ANATOMY AND PHYSIOLOGY.

1. Describe the hip-joint, giving an account of that portion of each bone

which enters into its formation, the ligaments and muscles, with their respective uses, which are in immediate relation with the articulation, and the vessels and nerves with which it is supplied.

2. Describe the origin, distribution, and anatomical relations of the arteries and their branches which supply the hand with blood.

3. Describe the anatomical relations, connexions, and structure of the small intestine, from the pylorus to the ileo-cæcal valve, with its blood supply and innervation, giving an account also of the processes carried on in each portion of this section of the intestinal tube.

4. Describe the anatomical relations, connexions, structure and functions of the sphenopalatine ganglion.

5. Describe the anatomical relations, connexions, structure and functions of the prostate gland.

SURGERY.

1. Describe the complications which may arise in cases of neglected stricture of the urethra: and the treatment to be adopted under the various conditions. What are the usual causes of death in such cases?

2. What are the causes of the condition known as "angular curvature" of the spine? Describe the various complications attendant on it, when affecting different parts of the vertebral column, and the treatment of each.

3. A man is the subject of a recent and large inguinal hernia, without symptoms of strangulation; the surgeon has failed to reduce it, under the influence of an anæsthetic. Describe the treatment to be adopted under such circumstances; with any complications which may subsequently arise, and in what manner these should be dealt with.

4. Describe the symptoms and causes of senile gangrene, and its treatment. What are the characteristics of that form of gangrene which is associated with diabetes; and in what respect would its course and treatment differ from that of the former variety?

5. By what symptoms may acute inflammation of the synovial membrane of the knee joint be diagnosed from an acute abscess of the bursa of the patella? What are the usual causes of the former, and what treatment should be adopted in its various stages?

6. What are the most common causes of necrosis of bone? In what respect does the acute differ from the chronic form, and what should be the treatment in each?

NATURAL SCIENCES.

ZOOLOGY.

1. What is Parthenogenesis? Mention one or more of the instances which have been adduced as cases of its occurrence in the animal kingdom.

2. What are the chief peculiarities in which the respiratory system of birds differs from that of mammals?

3. Refer to its class and order, respectively, the bat and the mole.

BOTANY.

4. Refer to its Natural Order a plant with the following characters:—

Leaves compound; corolla of five petals, papilionaceous; ovary superior, formed by a single carpel, dividing by dehiscence into two valves along a dorsal and a ventral line of suture; seeds without albumen.

Adduce from the Pharmacopœia one or more examples of this order.

5. Describe the changes which occur in the pollen grain when it falls on the stigma.

6. Give an example of a flower rendered incomplete by the absence of one or more of its verticilla. Mention the missing verticil or verticils in the example cited.

PHYSICS.

7. What is meant by the Torricellian Vacuum? What important implement depends for its action on the presence of this vacuum?
8. What is meant by the specific heat of a body?
9. Explain the phenomenon of the regular occurrence of land breeze and sea breeze.

CHEMISTRY.

1. What are the most important proximal constituents of wheaten flour? Distinguish the nitrogenous from the non-nitrogenous.
2. What is ozone? By what means may its presence be detected?
3. What is cyanogen? Give its symbol. What part does it take in the composition of hydrocyanic acid?

MEDICINE.

1. A case for critical Analysis and Commentary:—

A girl, aged 13, was admitted into hospital on April 8th, 1879. Five years previously she had an attack of acute rheumatism, followed by a relapse, from which she recovered, and remained perfectly well till the commencement of the illness for which she was admitted into hospital. Five or six weeks before admission she had suffered from dyspepsia and palpitation; and complained of stiffness of legs, followed by pain and swelling in the knees and ankles. These symptoms subsided in a week's time, but recurred after the lapse of another week, when she was attacked with pain and swelling in the right knee and left wrist.

On admission, her face was pallid, but cheeks were slightly flushed. The right knee and left wrist joints were red, swollen, tender, and painful. There was no cardiac pain, nor, indeed, pain anywhere else. Pulse 96, regular and soft. The cardiac impulse was diffused, but the apex appeared to beat one inch outside the left nipple in the fifth interspace. The præ-cordial dulness measured at this level about two inches and a half across, and extended upwards to the upper level of the third rib. A loud blowing systolic murmur, transmitted mainly towards the axilla, and heard at the angle of the left scapula, was audible at the apex. The sounds at the base were natural, but there was accentuation of the second sound. The lungs were resonant and the breath-sounds normal. The tongue was moist, but coated; the appetite fair, and no thirst. The splenic dulness was normal. There were no signs of abdominal affection. The urine was of specific gravity—1.022, clear, and without albumen. She slept well. The temperature, on admission, was 97°·4 Fahrenheit, but it rose in the evening to 102°·6, at which time the pulse was 120.

The following morning (April 9th) the rheumatic symptoms continued, the temperature remaining elevated, 100°·4, with a pulse of 120.

By the morning of the 10th, the inflammation of the joints had wholly subsided, but temperature remained febrile, and she was weak and poorly. So she continued with little change down to the 15th, and on the morning of that day, although her temperature was only 98°·8, her pulse was 132, and her tongue coated. That evening her temperature rose to 103°.

The next morning (April 16th) her temperature had fallen to 99°. The tongue was coated; the pulse 112, and respirations 26. There was no joint affection, and, in fact, nothing special to remark, except that she was quiet and apathetic, and remained weaker than one would have expected. In the evening there was slight return of pain and swelling in the ankle and wrist. This continued, not very severe, until the evening of the 18th—the temperature on the previous evening having risen to 103°·4.

From this time there was no return of rheumatism, but there was no improvement of her condition generally. She lay in bed, pallid, quiet, and

uncomplaining—not acknowledging any pain or suffering, and generally answering that she was better—her appetite remaining fairly good, and her bowels acting naturally. She became, however, progressively thinner and weaker; and her temperature, which had much of the hectic character, presented remarkable fluctuations. It was almost always lower in the morning than the evening; at the former time, indeed, it was often normal or even subnormal; and at the latter time rose occasionally to 100° , but more often to 102° or 103° . The highest temperature (with the exception of that preceding death) was 103.8° . She never had rigors.

About the end of April a rough murmur, increased by pressure, was audible at the base of the heart, but it soon disappeared, while the systolic murmur at the apex persisted without change.

A trace of albumen was first noticed in the urine on 14th April. A small quantity was again noted on 22nd and 24th; on 25th there was none. Henceforth a small quantity of albumen was noted almost daily, the urine being for the most part scanty, clear, and of high specific gravity.

On 6th June the spleen was found to be enlarged. Its dulness had an extent of four inches in the mid-axillary line, extending forwards, and, on deep inspiration, its lower extremity could be felt below the ribs. It was not tender at this time. On the 28th June it was first noted that, in addition to this enlargement, she had complained for a few days of severe pain in the splenic region—so severe as to cause her to cry out—and with tenderness.

She continued thus, becoming weaker, thinner, and paler, more and more apathetic, and latterly drowsy, until 14th July. At 8 A.M. of that day she seemed in her usual condition; but, at 11 A.M., she was found to be paralyzed and speechless. She had lost completely the use of the right arm and leg; her mouth was drawn to the left, and the right side of the face was weaker than the other. There was no loss of common sensation, nor of sight in the right eye. The pupils were equal and contracted to light. She whined a little from time to time, but did not utter any articulate sound. Her evacuations were passed unconsciously. She was not unconscious, but did not seem to understand what was said to her. At this time her temperature ranged from 98.2 to 98.8 ; her respirations were about 30, and pulse 114.

She now gradually sank, with no abatement of symptoms, and appeared to suffer pain in the left leg. Swallowing and mastication were difficult. Urine removed by catheter was turbid; specific gravity 1.032, and contained much albumen. Pulse, four days before death, ranged from 140 to 156; respirations 30 to 44; and temperature gradually rose from 100.2 on 15th July, to 106.6 shortly before death, at 7.45 P.M. on 18th July. She perspired profusely during this period.

Discuss fully the pathology and probable morbid anatomy of this case, explaining your views in detail regarding the origin, progress, and development of the symptoms and physical signs, and their mutual relationship, if any, with your conclusions as to diagnosis.

2. Give an account of the origin, symptoms, diagnosis, progress, and morbid anatomy of a hydatid tumour in the liver.

3. What are morbid conditions to which the names of "Renal Colic" and "Gall-stone Colic" are respectively applied? Describe the symptoms of "Renal Colic" and its diagnosis from other disorders for which it might be mistaken. How would you treat a paroxysm of renal colic, and how manage the case after relief of the paroxysm?

4. What are the difficulties peculiar to labour when an arm or a shoulder is the presenting part? How would you manage such a case?

5. What are the actions, therapeutic uses and doses of the following preparations:—Liquor Potassæ; Liquor Strychniæ; Extractum Belladonnæ; Extractum Hyoscyami; Tinctura Nucis Vomiciæ; Tinctura Rhei; Colocythidis pulpa; Scammonii Resina; Antimonium Tartaratum?

Part Fourth.

PERISCOPE.

PERISCOPE OF MEDICINE, CLINICAL AND PATHOLOGICAL.

By G. A. GIBSON, M.D., and WILLIAM RUSSELL, M.D.

TUBERCULOSIS COMMUNICATED BY FOWLS.—Dr G. de Lamallérée relates fully and convincingly an important case of this kind which occurred in a small hamlet with specially good hygienic surroundings, and where disease was practically unknown. A young soldier died here of phthisis which he had contracted while on active service. His wife, who nursed him assiduously and never left the room in which her husband was, showed signs of phthisis soon after his death, and the disease advanced rapidly. A neighbour who had little intercourse with her also developed signs of phthisis which the author was entirely at a loss to account for at first, as she had previously been a strong, robust woman. He discovered that a number of the fowls had died, and that they had been eaten by this woman in an undercooked state. He further noted that when the first female patient coughed, it was the signal for all the hens about to approach where she was in anticipation of getting the sputa to peck. He made a post-mortem examination on one of the fowls which died soon after his attention had been drawn to the facts, and he found extensive tubercular changes in the intestines and other organs, the parts containing the bacillus tuberculosis. He insists upon this being a case in which infection was conveyed, 1st, from man to man; 2nd, from man to animal; 3rd, from animal to man; and the case as recorded appears to us to be satisfactorily proved. — *Gazette Médicale de Paris*, 7th August 1886.

ON THE IMMUNITY CONFERRED AGAINST PULMONARY PHTHISIS BY THE CURE OF A LOCAL TUBERCULOSIS.—M. A. Marfan considers this subject at length in an elaborate paper, the main lines of which we can do little more than indicate here. Infectious maladies can be divided into two groups: the first comprises those diseases one attack of which exempts from another, the other comprises those in which one attack is not followed by immunity. Tuberculosis is generally classed in the latter group, but the aim of this paper is to prove that it really belongs to the former group. He first noted this immunity in hospital attendants who were much exposed to the tubercular virus, and in many of whom there was marked evidence of antecedent lupus or of a scrofulous affection of glands. He insists on the necessity of the absolute cure of the scrofulous or lupoid affection, and that unless the

resulting cicatrix is above suspicion immunity is not obtained. One chapter is devoted to a consideration of the evidence in favour of the tubercular character both of lupus and of scrofulous affections: the facts here are well known. In a second chapter the various cases are classified. He concludes that lupus and scrofulous affections are general diseases with a local manifestation, and that they rarely, if ever, lead to general self-infection; he therefore considers constitutional treatment of the greatest importance. In both local affections the virus is really an attenuated virus. The complete and thorough cure of either is difficult, but when obtained he believes the individual to be safe from pulmonary tubercle. Cases in which lupus or scrofula are consentaneous with pulmonary phthisis he regards as proving the general implication of the system.—*Archives Générale de Médecine*, April and May 1886.

MICRO-ORGANISMS OF PUS.—In 100 acute abscesses of different kinds Hoffa has found the staphylococcus aureus, the staphylococcus albus, as well as the streptococcus. They were alone or associated with each other; the staphylococcus predominated when the process was rapid, and the streptococcus when the evolution is slower, and when the inflammation is propagated by way of the lymphatics. Ogston, Rosenbach, and Socin have not found these organisms in cold abscesses. This fact aids in the differentiation of tubercular abscess. As an exception, however, to this rule, Hoffa cites two cases of purulent pleurisy with tuberculosis in which he found the microbes of suppuration. In abscesses caused by blenorrhagia, suppuration is attributed to the gonococcus; the author has twice ascertained the presence of the gonococcus in the urethral secretion at the same time as the staphylococcus aureus and albus was in the buboes, where they appeared to be the cause of the suppuration.

THE STREPTOCOCCUS OF ERYSIPELAS.—Hoffa has noted in a case which he cites a micrococcus in the suppurating articulations following erysipelas. This micrococcus, when cultivated and inoculated, produced a *rougeur migratrice*. This micrococcus resembles that found by Fehleisen, who admits that the micrococcus of erysipelas can determine suppuration (*Revue de Bactériologie*).—*Le Progrès Médical*, 14th August 1886.

THE LOCAL TREATMENT OF SYPHILITIC AFFECTIONS.—M. Gilles, in a communication to the Biological Society on the microbic nature of local syphilitic affections, deals with the treatment of them. He has obtained excellent results by local baths to the affected parts. He has found this method succeed where general treatment had failed. Especially he has noted the results in palmar and plantar psoriasis which has been either early or late in appearing. He uses a solution of mercury, and gives the local bath for

ten minutes. Crusts have to be removed to allow the parasiticide free action.—*Le Progrès Médical*, 24th July 1886.

THE ACTION OF SALINE PURGATIVES.—M. G. Leubuscher concludes from a series of experimental researches into the action of saline purgatives,—1st, That an exaggeration of the peristaltic movements of the intestine only plays a secondary part in the action of saline purgatives; 2nd, In whatever manner saline purgatives may be introduced into the intestine, the intestine becomes the site of a great secretion of liquid, which is the principal cause of the purgative action; 3rd, It is impossible to claim for saline purgatives that they act as a barrier to reabsorption; 4th, Saline purgatives introduced into the circulation in sufficient quantity produce constipation.

THE ANTI-RHEUMATIC ACTION OF ANTIPYRINE.—In the service of Professor Immermann, of Bâle, antipyrine has been administered in a number of cases of acute and of muscular rheumatism. The results obtained have been such that M. Eich does not hesitate to conclude that antipyrine is not inferior in efficaciousness to salicylate of soda. Occasionally it fails as the salicylate does, and it no more than the salicylate prevents the grave complications of acute articular rheumatism. The remedy has, however, given relatively favourable results in cases where there existed endocardial or pericardial complications. At the commencement he gives from 4 to 6 grammes daily. M. Lenhartz also gives his experience of the treatment of rheumatism with antipyrine. His conclusions are as follows:—1st, In the treatment of articular rheumatism, principally of the acute form, antipyrine is equally efficacious with that of salicylate of soda, for the drug (a) is endowed with a sure antipyretic action, (b) and leads to the disappearance of the local manifestations of the rheumatism, especially the pain; 2nd, It no more than the salicylate prevents relapses; 3rd, It can be used in cases where the salicylate is not successful; it is contra-indicated in adynamic cases, or where cerebral manifestations are present (*Revue de Thérapeutique*).—*Gazette Médicale de Paris*, 28th August 1886.

LESIONS IN THE FLOOR OF THE FOURTH VENTRICLE, AND IN THE AQUEDUCT OF SYLVIVS IN CEREBRAL HÆMORRHAGE INUNDATING THE LATERAL VENTRICLES.—M. Capitan gives a number of cases in which patients succumbed to cerebral hæmorrhage, with the classical symptoms of rupture into the lateral ventricles. In a considerable number of these he found minute hæmorrhages in the floor of the fourth ventricle, and dilatation of the aqueduct of Sylvius; in one he found a localized softening anterior to the aqueduct. He contends that in these cases the lesions are caused mechanically by the sudden eruption of blood into the lateral ventricles, damming back the cerebro-spinal fluid. These

lesions, he believes, are of real importance, and can be made to explain the bulbar phenomena, which are present in this form of cerebral hæmorrhage, and which it has been customary to attribute to a sympathetic or a reflex influence. Such are, for example, the disturbances of the cardiac or respiratory rhythm, which were observed in his cases, and which he thus seeks to explain by changes at the origin of the pneumo-gastric.—*Le Progrès Médical*, 28th August 1886.

OCCASIONAL PERISCOPE OF DERMATOLOGY.

By W. ALLAN JAMIESON, M.D., F.R.C.P., Extra Physician for Diseases of the Skin, Edinburgh Royal Infirmary; Lecturer on Diseases of the Skin, Edinburgh School of Medicine.

COMBINATIONS OF LANOLINE.—O. Philipp has stated the results of his experiments as to the best modes of prescribing lanoline. With soft fats, fatty oils, and oily substances, such as *pix liquida*, *ol. cadini*, oil of turpentine, and *ichthyol*, lanoline mixes easily. Hard substances, as *cetaceum*, must first be melted, and then the lanoline stirred into the melted mass. Overheating of the lanoline must be avoided, otherwise the water separates from the cholesterin fat.

LANOLINE CREAM.—*Cetacei* 60·0, *ol. olivæ* 30·0, *lanolini* 40·0, *aq. rosarum* 50·0.

UNGUENTUM DIACHYLON C. LANOLINO.—*Emplast. plumbi*, 50·0, *ol. olivæ*, 20·0, *lanolini*, 30·0. This makes a firm salve, which, however, melts rapidly on the skin. Salves of red or yellow precipitate compounded with lanoline are permanent, but are too consistent to be used as eye salves without the addition of fat. A useful eye salve can be compounded thus:—*Hyd. oxid. rubri vel flavi*, 2·0, *adipis*, 30·0, *lanolini ad.*, 100·0—*Pharmaceutischer Centralhalle*, 1886, No. 9, and *Monatshefte für Dermatologie und Syphilis*, No. 4, 1886.

TO OBVIATE THE TOXIC ACTION OF PYROGALLIC ACID.—Unna writes thus,—“In order to avail one’s self of this valuable remedy in the treatment of leprosy, an experience of eighteen months has proved to me that the troublesome effects of those reducing agents, such as sulphur, resorcin, chrysarobine, and pyrogallie acid, can be prevented by the internal administration of mineral acids, which tend to diminish the alkalinity of the blood. Moderate doses, 15 to 30 minims, may be prescribed. Should toxic action have declared itself, 75 to 150 minims daily of the dilute acid are requisite. The nitro-hydrochloric acid is used by preference. In my clinique I administer the nitro-hydrochloric acid not only in the treatment of leprosy, but also in psoriasis, and in all maladies which demand an extended application of the above-named remedies. In this way these can be used fearlessly in larger doses, and during a

longer time. While I have never seen any ill effects resulting from this method, I have several times noticed toxic action when the acid had been omitted."—*Annales de Dermatologie et de Syphiligraphie*, March 1886.

ON THE LIMITATION OF THE CONTAGIOUS STAGE OF SYPHILIS, ESPECIALLY IN ITS RELATIONS TO MARRIAGE.—Otis has investigated this important question, and, in particular, has analyzed Fournier's cases, and concludes—1st, that all lesions of the tertiary stage are non-contagious; 2nd, that the contagious stage of syphilis can be spontaneously recovered from without treatment; 3rd, that the limit of this stage may be certainly fixed at a point within five years from infection. He has *never* seen a case of syphilis presenting an undoubted lesion of the secondary or active stage after the termination of the second year. Lesions of the tongue occurring from two to a dozen years after infection have never in his experience proved a source of syphilis to others, although coming into most intimate contact, as between husband and wife, for a series of years. He does not hesitate to state that such forms of trouble occurring as a sequel of syphilis, three or more years after infection, do not contain the infectious property of syphilis, and hence cannot communicate it. He has seen numerous cases, and observed them during long periods, in which marriage has taken place from three to twelve or more years after a syphilitic infection of the father, and yet has never seen a single symptom of syphilis in the wife or in the children born of such a marriage. He explains those reported cases, when syphilis has been claimed to have been contracted from persons whose syphilis had its initiation three or more years previously, by another infection from a source less than three years from date of its acquisition. As regards the true contagium of syphilis, one important fact in relation to it is well proved, namely, that it is contained in the substance of the initial lesion or chancre, and the lymph channels and glands in immediate relation thereto, and that, as a rule, for a period of at least eight weeks, it is confined between this point and the general blood current. The tertiary lesions of syphilis are invariably due to obstructions of lymphatic spaces and channels, the result of simple pathological changes occurring during the active and contagious stage.—*Journal of Cutaneous and Venereal Diseases*, March and April 1886.

PERISCOPE OF SYPHILOLOGY.

By FRANCIS CADELL, F.R.C.S. Ed.

SOME MOOT POINTS IN THE NATURAL HISTORY OF SYPHILIS.—Abstract of Lettsomian Lectures, by Mr Jonathan Hutchinson, concluded from p. 282.

Are there any Chronic Skin Diseases which are due to the Inheritance of Syphilis?—There is a rare form of lupus which is directly

due to inherited syphilis. It occurs usually at about the same age as the interstitial keratitis—that is, from five years old to adult life. It differs from common lupus, and even from the forms of lupus which occur in connexion with acquired syphilis, in that it is never preceded by any tubercular stage, but is from the beginning erosive, or even phagedænic. It is, in fact, a form of phagedæna, but it attacks usually the favourite position of lupus, the nose. Its progress is rapid, and it may in a few weeks destroy the whole nose, and spread upon the cheeks. Common lupus, as is well known, usually leaves a border of skin near to its margin more or less involved, it being difficult to get it absolutely well. This disease, on the contrary, heals absolutely, and the skin up to its very edge is left quite sound. Hence there results a parched scar, which suggests that healthy skin had been more or less undermined, and its edges in the healing had fallen down together. This malady is never chronic. It may be cured in a few weeks by free cauterization, and is always restrained, if not cured, by the iodide of potassium. By the side of this disease, which may be suitably called phagedænic lupus, and which has its exact analogue, and one far more common, in the acquired disease, we may place certain similar forms of ulceration which occur on various parts of the limbs in association with disease of the bones. It is precisely in respect to the bones that the subjects of inherited taint suffer more severely than do those who have acquired it. Multiple nodes are in them very common, especially in the long bones; and a large proportion of the specimens of chronic sclerosis of long bones, so frequent in our museums, are from those who have been the sufferers from inherited taint. As a rule, the chronic periostitis which occurs under these circumstances does not lead either to suppuration or to necrosis. It leads to sclerosis and overgrowth in all directions. Sometimes, however, suppuration takes place, and the roughened bone is exposed, and may exfoliate. In these cases a sort of secondary implication of the skin may result. As a rule, it is obviously secondary. Mr Hutchinson asserts that no forms of psoriasis, lichen, or eczema really acknowledge a parentage in hereditary syphilis.

The Nervous System.—We may have meningitis, neuritis, and diseases of the vessels with all their variety and consequences, but they are far more rare than in the subjects of acquired disease. Excepting in the infantile period, congenital syphilis but rarely shortens life. It does not in any special manner predispose to anything.

Idiocy in connexion with Inherited Syphilis.—Idiocy in connexion with congenital syphilis is certainly not common. As a matter of clinical observation, it is not at all uncommon to note a slight deficiency in vigour of intellect in the subjects of infantile syphilis, but that anything amounting to dementia is certainly rare.

Case of Defective Brain, with Atrophy of Optic Discs, in association with Inherited Syphilis.—A young man afforded an excellent example of the slighter form of mental defect sometimes met with

in connexion with inherited syphilis. There was no doubt that he had experienced an attack of neuro-retinitis, and that slight changes were now in progress in the direction of retinitis pigmentosa. The lad was so nervous that he could scarcely be got to speak or to read the test-types. A friend who came with him said that his intellect was decidedly defective. It is not uncommon for congenital syphilis to damage, in some slight degree, the whole bodily development; its subjects are not very unfrequently short in stature, and a shade below the average in general capacity. Sometimes there appears to be special defect in sexual development.

Part Fifth.

MEDICAL NEWS.

ROYAL COLLEGE OF PHYSICIANS AND SURGEONS, EDINBURGH.—The following gentlemen passed their final examination for the double qualification in Medicine and Surgery at the sittings held in September 1886, and were duly admitted L.R.C.P. and S. Ed.:—Percy H. S. Mellish, Brisbane, Queensland; William Hannay Shand, Edinburgh; Frederic John Brownfield Bateman, Steyning, Sussex; John Smith, Edinburgh; George Ernest Claxton, Dartford, Kent; Stuart Herriot, Chiswick; Charles Augustus Edwards, London; Robert Sinclair Smith, Broughty Ferry; Joseph U. Downing, Birkenhead; Richard W. Long, Skibbereen, Co. Cork; Samuel Horner Craig, Feeny, Co. Derry; Thomas Godley, Ballyheigul, Co. Kerry; A. O'Reilly, Blackwood, Queenstown; Anthony Daly Dunn, Ayr; William Chalmers, London; William McCoull, Prudhoe-on-Tyne, Northumberland; William Henry Chamberlain, Cambridgeshire; Robert John Beacom, Edinburgh; Bartholomew O'Regan, Edinburgh; William Calwell Graham, Edinburgh; Henry Joshua Augustine, Edinburgh; Frederick William Gibbon, South Shields; Tennell Evans, Cork.

RESEARCH SCHOLARSHIPS.—We have much pleasure in announcing that Dr G. Sims Woodhead has been elected to hold one of the Research Scholarships of the Grocers' Company (London).

FONFARSHIRE MEDICAL ASSOCIATION.—A meeting of the Council of this body was held this week, at which the subject of the representation of the medical profession in Scotland in the General Council was considered. It was moved by Dr Greig, seconded by Dr J. W. Miller, that Dr Sinclair, of Dundee, be brought forward as a candidate. A committee was formed, with Dr Greig as chairman, Dr Miller as vice-chairman, and Drs Stalker and Reid as secretaries, to promote the election, and to communicate with the other Medical Associations and secure their co-operation. The election takes place about the middle of November.

ACADEMY OF MEDICINE OF PARIS.—At a recent sitting of this learned body, Dr Bateman, of Norwich, was elected a Foreign Corresponding Member of this Academy. Amongst the physicians upon whom this distinction has been conferred during the last quarter of a century have been the late Professor Hughes Bennett, F.R.S., of Edinburgh; Dr West and Sir Joseph Fayrer, of London; and the late Sir Dominick Corrigan, Bart., Physician to the Queen in Ireland.

A DOCTOR'S TALE OF THE AMERICAN CIVIL WAR.—Dr Robert St George Dryanforth, of Washington, relates a curious experience of his own during the war of the rebellion, and later, while acting as a correspondent in the Franco-German war. While serving in the first great struggle, the doctor was shot through the lungs and was invalided. He subsequently went to Europe for his health, and remained there some years. When the German war broke out he became correspondent for the *New York Tribune*, and in one of the battles he was shot through the base of the skull. He caught a heavy cold while lying wounded on the battlefield, and his wound in the lungs troubled him so much that his life was despaired of, and he was a victim of rapid consumption. One day during a violent fit of coughing the doctor brought up a piece of his overcoat, which had been shot into his lungs ten years before. The ejection of this cause of irritation so relieved him that he at once became better, and finally completely recovered. He returned to Washington, and has since held the office of Judge of the Court of Appeals. He was also a member of the Board of Examiners, and Assistant Commissioner of Patents. Dryanforth is now a prominent patent lawyer.—*New York Mail and Express*, 28th August 1886.

HYPODERMIC POCKET CASE WITH SOLID SILVER SYRINGE.—Messrs Burroughs, Wellcome, & Co. have in this little instrument shown admirable workmanship and extreme ingenuity in, at the same time, economizing space and providing a reliable, neat, and wonderfully cheap syringe. When we mention that from ten to fifteen varieties of hypodermic tabloids, and an excellent syringe so arranged as to act as mortar and pestle for the solution of the tabloids, are put in a little morocco case $3\frac{1}{4} \times 2\frac{1}{2} \times \frac{3}{4}$ of an inch, and which weighs barely two ounces, all for a very modest sum, the profession will be tempted to buy and use them.

OBITUARY.

FRANCIS WALTER MOINET, M.D., F.R.C.P. Ed.

SINCE the beginning of the present year Edinburgh has lost by death an unusual number of medical practitioners, including some of our most eminent physicians. This death roll includes many well-known names, such as Dr Cumming, Dr Sidey, Dr Angus Macdonald, Dr Williamson, Leith; Dr Finlay, Trinity; Dr David Gordon, and Dr Bishop.

Last month we had to record the death of Dr Dudgeon, who died suddenly at a very early age; and this month it is our painful duty to notice the death of another well-known member of our profession, who has been suddenly cut down in the very prime of manhood.

Francis Walter Moinet was a native of Edinburgh, his father holding the high and honourable position of manager of one of our large insurance offices. Dr Moinet received his medical education at the University of Edinburgh, and partly at the Extra-Academical School of Medicine. He graduated at the University of his native city as M.B. and C.M. in 1867, and obtained his M.D. in 1870. He was elected a Fellow of the Royal College of Physicians in 1872.

Dr Moinet was at one time house-surgeon to Dr P. Heron Watson in the Edinburgh Royal Infirmary, and afterwards acted as resident physician in the medical wards. He was one of the medical officers of the Royal Public Dispensary, and for several years held the responsible position of physician to the St Cuthbert's and Canongate Poorhouse. He was a skilled practitioner, kind to his patients, and always most honourable and courteous to his brother practitioners. He was naturally of a genial disposition.

For eleven years he was a lecturer on *Materia Medica* in the Edinburgh School of Medicine, and was one of the Examiners in Chemistry appointed by the Royal College of Physicians. In addition to these important appointments, Dr Moinet was medical officer for the Caledonian Insurance Company.

Dr Moinet devoted his spare time to medical literature. He contributed various papers to our pages, including one "On Angina Pectoris," and another on "Quinine, a Physiological Antidote to Malarial Poison." He was the editor of the last edition of Scoresby-Jackson's *Materia Medica*, which is still a favourite text-book with many students.

For a time Dr Moinet has been in somewhat feeble health, and he contemplated a change to a more genial clime, but he died very suddenly on the 6th ult., leaving behind him many friends, besides a widow and young family, to mourn his untimely end.

CORRESPONDENCE.

To the Editor of the Edinburgh Medical Journal.

METAPHYSICS VERSUS PHYSIOLOGY.

EDINBURGH, September 1886.

SIR,—In the current number of the *Journal* the following sentences occur in a review of Professor Lyman's book on *Insomnia*:—"Discussing the causation of sleep in the first place, the author is of opinion that it must be sought in the molecular structure of the brain, and not in the fluctuations of the blood current; and that sleep, therefore, must be regarded as the cause, not the consequence, of the cerebral anæmia found during slumber. With this view we are entirely in accord."

As this form of argument seems not uncommon, and is found in quarters where one is rather surprised to notice it, I shall feel

obliged if you kindly afford me space strongly to protest against it. With the opinion that the causation of sleep must be sought in the molecular structure of the brain I am not likely to find fault. No one has argued more insistingly than myself that "the first change is a modified movement in the molecules of the brain tissue;" or, that the molecular motions "constitute the supreme conditioning factor." When the writer, however, goes on to say that sleep is the *cause* of the cerebral anæmia, I suspect his philosophy is very seriously at fault. He is applying a metaphysical method of explanation to a physical effect, and to do so is certainly against the canon of scientific reasoning. To say that sleep is the cause of unconsciousness may be allowed, for here both antecedent and consequent are metaphysical terms; but when a physical change is traced to a specific cause, the latter must be some form of actual energy, and this sleep is not.

To say, therefore, that "sleep must be regarded as the cause of the cerebral anæmia found during slumber" may serve to express the insight of a poetical imagination, but as a physiological explanation it is simply nonsense. It would be just as philosophical for the physicist to say that night must be regarded as the cause of the disappearance of the sun that occurs during nocturnal hours.

Apologizing for thus intruding on your valuable space, I am,
faithfully yours,
JAMES CAPPIE, M.D.

PUBLICATIONS RECEIVED.

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- Army Medical Department Report for 1884. London, 1886.
- H. C. BASTIAN, M.A., M.D., etc.—Paralyses: Cerebral, Bulbar, and Spinal. H. K. Lewis, Lond., 1886.
- Sir THOMAS BROWNE, M.D.,—Religio Medici. Cassel & Co., Lond., 1886.
- LUDWIG BRUCK,—Australasian Medical Directory and Handbook. Sydney, 1886.
- Sir CHARLES A. CAMERON,—History of the Royal College of Surgeons in Ireland. Fannin & Co., Dublin, 1886.
- W. WATSON CHEYNE, M.B.,—Recent Essays by various Authors on Bacteria in Relation to Disease. New Sydenham Society, Lond., 1886.
- C. H. EYLES, L.R.C.P. & S. Ed.,—Malarial Fever as met with on the Gold Coast. Lond., 1886.
- Führer durch das Medicinische Berlin. Berlin, 1886.
- ARTHUR FULLER, M.B., C.M.,—South Africa as a Health Resort. W. B. Whittingham & Co., Lond., 1886.
- Guy's Hospital Reports. Vol. xliii. J. & A. Churchill, Lond., 1886.
- K. M. HEANLEY,—A Manual of Urine Testing. H. K. Lewis, Lond., 1886.
- G. F. HELM, M.A., M.D.,—Short Sight, Long Sight, and Astigmatism. J. & A. Churchill, Lond., 1886.
- D. W. C. HOOD, M.D.,—Diseases and their Commencement. J. & A. Churchill, Lond., 1886.
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- CHAS. W. PURDY, M.D.,—Bright's Disease, and Allied Affections of the Kidneys. H. K. Lewis, Lond., 1886.
- Report by Vet. Surg. J. H. STEEL on Disease among Transport Mules in Burma, and on "Surra" by Dr GRIFFITH EVANS.
- R. LAWTON ROBERTS, M.D.,—Illustrated Lectures on Ambulance Work. H. K. Lewis, Lond., 1886.
- TOM ROBINSON, M.D.,—Diagnosis and Treatment of Syphilis. J. & A. Churchill, Lond., 1886.
- JAMES B. RUSSELL, M.D.,—The Vital Statistics of the City of Glasgow. Glasgow, 1886.

- S. J. SHARKEY, M.A.,—Spasm in Chronic Nerve Disease. J. & A. Churchill, Lond., 1886.
- H. H. TOOTH, M.A., M.D., etc.,—The Peroneal Type of Progressive Muscular Atrophy. H. K. Lewis, Lond., 1886.
- Transactions of the College of Physicians of Philadelphia, vol. viii. Philadelphia, 1886.
- Transactions of the Obstetrical Society of London, vol. xxviii. Part 3. Lond., 1886.
- Twenty-eighth Annual Report of the General Board of Commissioners in Lunacy for Scotland.
- Twenty-ninth detailed Annual Report of the Registrar-General of Births, Deaths, and Marriages in Scotland, 1886.
- Prof. ROBERT WIEDERSHEIM, — Elements of the Comparative Anatomy of Vertebrates. Macmillan & Co., Lond., 1886.

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- Albany Medical Annals,—April-Aug.
- Alienist and Neurologist,—April.
- American Journal of Obstetrics,—May-Aug.
- American Journal of the Medical Sciences,—July.
- American Lancet,—June-Aug.
- American Practitioner,—June, July.
- American Practitioner and News,—May 15-Sept 4.
- Annales d'Oculistique,—May-Aug.
- Annales de Dermatologie, etc.,—May 25-Aug.
- Annales des Maladies de l'Oreille, etc.,—May-Sept.
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- Australasian Medical Gazette,—April-July.
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- Centralblatt für Gynäkologie,—May 22-Sept. 18.
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Part First.

ORIGINAL COMMUNICATIONS.

I.—FATTY DEGENERATION OF THE HEART.

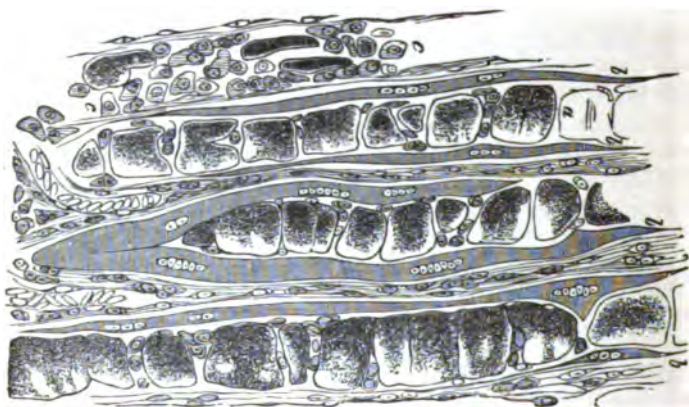
By J. MILNER FOTHERGILL, M.D. Edin.

A GOOD deal of avoidable misery has been caused by careless or cruel thoughtless medical opinions, and in no case more or worse than in "fatty degeneration of the heart." I can call to mind a number of instances of elderly men going about for years, walking with the greatest caution, and, like Paul, "dying daily," haunted with the impression that they were liable on any effort or accidental shock to die on the spot. In one case the diagnosis was made by a practitioner personally well known to me, who knew just as much about "fatty degeneration of the heart" as he did about "Chinese medicine," viz., that there was such a thing. No more!

Even still one comes across cases where the patient gives an account of having been told that the heart was fatty some years previously, the heart being in very good condition. Such diagnosis, it is to be feared, is the outcome of ignorance rather than of knowledge. In reality the diagnosis of fatty degeneration can only be arrived at—if arrived at at all—after very careful consideration of the whole aspect of a case; and then is a matter rather of surmise and conjecture than of certainty. Probably there are not a few physicians who would simply question the possibility of any such diagnosis being made; and yet it used to be, and perhaps now is made in a very off-hand manner by men not remarkable for the extent of their information, their diagnostic acumen, or their familiarity with pathology.

The histolysis of muscular fibre by fatty degeneration is a matter of great and curious interest—so much so, that it seems to me worthy of some consideration. Muscular fibre consists of albumen and fat in a comparatively loose combination, so that it readily breaks down into fatty debris, and some soluble nitrogenized body which escapes into the blood-current. What that nitrogenized body is when it enters the blood is unknown, but in all probability it leaves the body by the urine in the form of urea. The other product—the fat—is frequently absorbed. Such, indeed, is the process of involution in the gravid uterus after the expulsion of its contents. The large muscular body undergoes this fatty

histolysis, and in a short time is restored to its normal size in the unimpregnated state. Then again the muscles of a broken limb undergo this fatty change while kept at rest—in order to permit of the reunion of the bone. From these facts it would seem that muscles can undergo the change known as “fatty degeneration” and yet recover; as is certainly the case after a prolonged pyrexia, as typhoid fever for instance. In sustained pyrexia, the muscles melt down and waste, the heart along with the other muscles. Not only is this known from *post-mortem* examination, but it has been ascertained in the living being by the process of harpooning, by which a small piece of muscle is removed from the body. On examination, the muscular fibrillæ are found in a state of fatty degeneration. Repair takes place by the growth and development of embryonic muscular fibrillæ within the sarcolemma. In the accompanying engraving taken from Rindfleisch’s *Pathological Anatomy*, published by the Sydenham Society, this necrobiotic change is well depicted. The fatty debris of the whilome muscular fibril is seen disappearing by absorption alongside the growing, waxing, new fibril, which is developing within the sarcolemma, to take the place and perform the function of its effete predecessor. In fevers the muscles waste by this necrobiotic process, and in convalescence regain their wonted plumpness by the growth of new fibrillæ.



Acute Degeneration of the Heart (from Rindfleisch).

Thus we see that fatty degeneration is an outcome of a sustained high temperature.

Then again fatty degeneration of the muscular fibre of the heart is found with conditions of anæmia. Notably is this the case in pernicious anæmia, where “the blood turns to water,” so thin does it grow. A like condition of the heart-wall is found in cases where there has been repeated recurrent hæmorrhages. It has been artificially produced in animals by recurrent venesections.

Consequently we can see that this necrobiotic change—this dissolution of muscle—is set on foot where the blood is impoverished and the serum-albumen (the pabulum of the tissues) is seriously diminished. In all wasting disease the heart is liable to this histolytic change, and the muscular structure is found either undermined by this destructive process, or is small and atrophied from absorption of the fatty debris.

Fatty degeneration, then, is causally linked with an insufficient blood-supply to the heart-muscle. But other tissues undergo the same morbid fatty change under these circumstances—notably the liver.

A curious contribution to our knowledge of fatty degeneration was supplied by Bauer. He found that after starving a dog till it was emaciated and its fat burned up, while its urine solids were brought down very low, and then administering small doses of phosphorus, the excretion of nitrogen by the urine mounted up markedly; and on killing the animal its muscles, and notably its heart, were the seat of well-marked fatty decay. It was evident that the presence of this element in the blood produced a decomposition of the muscular structures. The atrophy of muscles in paralysis is apparently brought about by a like fatty degeneration and absorption; whether due merely to functional disuse, or to some extent to loss of innervation, is not yet clear.

From the foregoing considerations it would seem that fatty degeneration of muscular fibre is set up under various circumstances. That it is distinctly physiological in the uterus after parturition; and the means by which nature brings about the involution of the huge womb after its work is accomplished. It is the means by which muscles melt down under a high temperature. That it occurs in malnutrition, as in pronounced anæmia, however brought about. It is set up by toxic matters in the blood which decompose muscular structures. It is probable that loss of nervous influence may structurally disorganize muscular fibre.

After this review of the circumstances—varied as they are—under which fatty degeneration of muscular structures occurs and is set up, or brought about, it becomes possible to all the better comprehend that form of it which is linked with senile changes in other tissues, and which is the last act in a long pathological drama in many instances. This is the form to which the term “fatty degeneration” is essentially applied; and when that term is used, this senile form of muscular decay is the one usually meant by the speaker.

The natural history of this form of fatty degeneration is as follows:—There is a rise in the arterial blood-pressure started by an excess of excrementitious matter in the blood in the form of urates. [It would seem that so long as the liver can form urea no change in the circulatory organs takes place. But when the liver reverts, or falls back upon the primitive uric acid formation

(normal in animals with a three-chambered heart and a solid urine), then the accumulation of this in the blood raises the blood-pressure in the arteries.] Blood laden with urates provokes, in some way, the circular muscular fibres of the arterioles, which contract, and so set up opposition to the blood-flow. This leads to a damming of the blood in the arteries, and consequent heightened arterial tension. The left ventricle becomes hypertrophied to cope with the increased resistance to be overcome on the ventricular systole. The central muscular fibre and the peripheral muscular fibre are both hypertrophied, and the artery leading from the one to the other is full and tense. This is the first structural departure in that widespread morbid process—Bright's disease—using the term in its most extended sense. A hypertrophied left ventricle, a tight artery, a loud, aortic second sound (due to the violent closure of the aortic valves), and a large flow of urine of low specific gravity (the physiological outcome of high arterial tension), are the phenomena manifested in the early stage.

This stage may, and usually does, last for years, having as its pathological outcomes aneurysm and apoplexy; while spasm of the hypertrophied arterioles gives rise to angina pectoris (vaso-motoria). So far the vascular system is the one mainly affected; and it is in it we have to look for the evidence of Bright's disease rather than the test tube. The urine is large in bulk, and throws down a distinct sediment very frequently on cooling. The ruin of the kidneys is wrought in time by this output of early primitive urine-stuff, unsuited to kidneys constructed to deal with soluble urea. Not uncommonly this condition is described as the second stage of Bright's disease.

This high arterial tension starts up the atheromatous change in the distended arterial wall by a growth of connective tissue. The arteries lose their elasticity, and the aortic recoil is impaired. The coronary vessels, the nutrient arteries of the heart itself, experience the unbroken shock of the aorta, and manifest the atheromatous change more markedly than do any other arteries. They become tortuous, by which the blood-current is obstructed and delayed. They experience a diminution of their bore, calibre, or lumen in consequence of the new growth within their wall—the thickening of the tunica intima. The result which follows is gradual malnutrition of the heart wall, with attendant necrobiotic change—"fatty degeneration."

Muscular fibrillæ, as we have seen, readily undergo that decomposition—the conversion of them into fatty debris when their blood-supply is defective. The heart which usually meets with this fate is the hypertrophied or "gouty heart." (From its frequent occurrence among gouty persons.) A heart may be fatty and not enlarged, but this is not the rule. The heart of mural decay is a large heart as a rule. Its cavities are enlarged, and its structure weakened. It is possible to conceive that a large heart may be reduced in bulk

by the absorption of fatty debris, just as occurs in the empty uterus. And that this gives us the fatty heart not increased in bulk; and where sudden death from heart failure is the end of the case. But the much more common experience is gradual failure of the heart. As its structure becomes undermined by mural decay, so hand-in-hand the vigour of the organ wanes and the circulation fails. With this we get all the phenomena of the failing heart—dropsy, albuminuria, orthopnoea, liver enlargement, renal congestion; indeed, the whole array of morbid manifestations which are the resultant outcomes of cardiac failure. Such fibres as are unaffected carry on the losing fight until the inevitable end comes. When the struggle is over the enlarged heart is found to have been the seat of a widespread necrobiotic change. To use a plain old Saxon term, it is “rotten.” Decayed, indeed!

Such are the circumstances under which we encounter “fatty degeneration” of the heart in practice.

More rarely the decay is more localized, and then we get death by rupture in one of the rotten spots in the heart wall.

When the blood-supply to the heart is being gradually cut off, the muscular fibres feel the insufficient nutrition, and begin to undergo that decomposition into fat and some nitrogenized body to which, as we have seen, they are so prone. At what point it becomes possible to recognise this mural decay I could not attempt to say. Probably signs of a failing circulation with senile tissues would justify a suspicion. But until the effects of treatment are tried it is simply humanly impossible to distinguish betwixt some temporary malnutrition and incipient fatty degeneration. If, after the administration of digitalis and strychnia, with careful attention to the dietary for some time, no improvement is made,—and still more if a temporary improvement is succeeded by retrogression and a deepening of the symptoms,—our suspicions are strengthened. But after all it is but suspicion (however strong) at the best. And it is unfortunate that the term “fatty degeneration” has become so well known. It would be much better in every way to speak of a “failing heart” than of “fatty degeneration.” The one is a clinical fact not difficult to recognise; the other is a pathological speculation which can only be demonstrated in the dead-house.

Another argument is that some young medical men passing through the stage of pathological fervour may apply the term “fatty degeneration” to conditions of temporary weakness in the heart, where probably the statement is correct enough from a purely pathological point of view. Such use of the term would, however, lead to confusion worse confounded; more clashing medical opinions; more bewilderment upon the part of patients. On consulting an older practitioner the young pathologist’s opinion might be derided, and the patient (having recovered from the evanescent debility in the heart) be assured his heart is “all right.” Whether the latter expressed any opinion or not about

the views of his junior, the patient, if he believes the latter (as he pretty naturally will), cannot help having his doubts about the validity of the first opinion. This is inevitable. If one be right the other necessarily is wrong!

On the whole it would be well to restrict "fatty degeneration" to the record of the post-mortem appearances, and do away with it at the bedside. Even the term "some softening" (however correct in speculative pathology) has got the same drawbacks to its employment, viz., the creation of a false impression on the one hand, and the potentialities of conflicting medical opinions on the other. To some these may seem trivialities; but such they do not seem to me. If the fair fame of the medical profession is to be maintained, we, its members, ought to have among us some common understanding as to what is meant by the terms we employ. It is but justice to ourselves; but justice to our patients. It not unfrequently falls to the lot of a specialist to have submitted to him the written opinions of several physicians previously consulted, and for him to discern a wonderful agreement of opinion, where the patient and his friends have been able to decipher nothing but dissension and difference. Why? Mainly from the variation in the wording and in the terms employed. If all the medical men could have been called together the patient's disquietude could soon be set at rest, and the seeming conflict dispelled.

With primary valvular lesions of the heart, their causation, their sequelæ, and their terminations, our acquaintance is very considerable, though not yet quite complete. It is far otherwise as to our acquaintance with the heart as a muscle; and especially with the changes of form and ultimately of structure which go on in the course of that long pathological process which is variously termed "Bright's disease," or "renal cirrhosis," or "atheroma of the arteries," or "the gouty heart," and towards its termination "failing hypertrophy," or "softening of the heart wall," or "fatty degeneration of the heart:" terms which, however closely allied to those who are familiar with the subject in its entirety, seem strangely contradictory to others not equally behind the scenes. On complicated subjects knowledge is built up of fragments,—fragments, too, which often lie widely apart. In a complicated pathological process we find them; and Dr Latham, in his classical work on *Diseases of the Heart*, says truthfully: "We do not learn it from seeing it as a whole, as it passes through all its stages in the same individual—men and women. Being an affair not of days or weeks, but of months, and many months, and oftener of years, and oftener still of many years, we are indeed very seldom present as eye-witnesses of it from first to last. Thus our knowledge of it is not drawn from single and complete histories, but put together piecemeal from numerous imperfect ones."

But until our familiarity with this chronic widespread senile

change—for which “lithiasis” (where gouty phenomena are manifested) and “chronic Bright’s disease” are as yet the nearest terms we possess—becomes so sufficiently complete that some inventive genius can hit off a happy term which will be accepted by all, a certain amount of confusion must exist,—like the world in chaos “without form and void,” before it became “earth and sea,” with all each bears.

Our masses of fragmentary knowledge are, however, rapidly arranging themselves, and order is beginning to manifest itself. The difficulty lies not so much in the insolubility of the problem, as in the varying amount of incompleteness of knowledge on the subject possessed by the various members of the profession—some being still in the darkness that goes before the dawn, while others are in comparative daylight. “Fatty degeneration of the heart” is a term of the dead-house; and as such a condition was found after death, the inference that it must have had an ante-mortem stage in life was easy. The ready acceptance of the term before we were acquainted with the phenomena manifested in life was an unmitigated misfortune; and the sooner the term is referred back to its source and place of origin the better. There it has a distinct unmistakable place; but in clinical medicine it is out of place, misleading rather than otherwise; of little utility, and certainly the source of much error, entailing painful consequences; the cause of much avoidable misery to patients, and of much injury to professional reputations, and therefore an object deserving and worthy of banishment. And banished it should be!

The introduction of the term “fatty degeneration of the heart” is one of the left-handed services which pathology has rendered to clinical medicine.

II.—AN OUTBREAK OF CEREBRO-SPINAL FEVER.

By T. J. MACLAGAN, M.D., M.R.C.P., Physician in Ordinary to their Royal Highnesses Prince and Princess Christian of Schleswig-Holstein.

(Continued from page 314.)

THERE are various points which call for more special notice than they receive in the mere report of the cases.

First as to DIAGNOSIS—

We see so little of this form of fever in this country, and so much of other forms for which it may readily be mistaken, that it is of some importance that we should know its essential features, and be able to diagnose it when it presents itself. The forms of fever for which it is most likely to be mistaken are typhus and typhoid fevers. To each of these, individual cases of cerebro-spinal fever may bear so close a resemblance that the differential diagnosis may be by no means easy. In sporadic cases, and in the earlier cases of an outbreak, errors in diagnosis may very

readily be made; for the disease is rare, one is not on the outlook for it, and, unless its characteristic features are well marked, it may run its whole course without its true nature being recognised. I can recall the case of a private patient whom I attended in November 1876 for an attack of fever which proved fatal on the 15th day. The case presented all the features of typhus, but there was no rash. The case puzzled me somewhat, and as no post-mortem examination could be got, my doubts could not be cleared up. I certified the man as having died of typhus. I have no doubt now that it was cerebro-spinal fever.

Many of the cases whose details I have given were seen by competent and well-informed medical men before admission to hospital, but in not one instance was the true nature of the disease recognised. They were all sent in as cases of either typhus or typhoid fever by men who afterwards recognised their true nature. Even after admission to hospital, where they could be carefully watched, the diagnosis was often made with difficulty. The C. cases ran nearly their whole course before one was sure of the diagnosis. The first of the M. cases was so obscure that not till other members of the family suffered was its true nature known. In two cases (X. and XI.), occurring in two brothers, the disease so closely resembled typhoid fever in its symptoms and course that that was believed to be the malady from which they suffered, till the second had run its course to a fatal termination, and the true nature of the malady was declared by post-mortem examination. Then, and not till then, was it known that typhoid was not the disease from which they had suffered.

The main points of distinction, as they presented themselves in the cases related, were as follows:—

The initial symptoms are more marked in cerebro-spinal fever than in typhus or typhoid. In typhus they consist of shivering, headache, loss of appetite, thirst, and a general sense of misery.

In typhoid they are general malaise, loss of appetite, aching of limbs, and more or less headache. In cerebro-spinal fever we have the same symptoms, but, as a rule, the initial rigor is more marked, and the headache more intense. A common feature, too, is sickness. The intensity of the headache and the accompanying sickness were the characteristic initial symptoms in most of the cases. The headache, too, was more persistent, as well as more severe than in typhus or typhoid; in the former it generally passes off in a few days, and later on is replaced by delirium; in typhoid it may be more lasting, but is not so much complained of. In cerebro-spinal fever it is not only more intense, but lasts longer, possibly during the whole illness, and is not so apt to be replaced by delirium. The sickness is of cerebral origin, and is often very distressing during the first few days of the illness.

The facial expression in typical cases of cerebro-spinal is so peculiar that by it alone a diagnosis might almost be made. In

typhus the expression is dull and heavy, and the eyes are injected. In typhoid it is listless and weary rather than heavy; there is often a circumscribed flush on the face, and the sclerotics are clear and pearly. In cerebro-spinal fever there is more intelligence of expression, and with it often a look of anxiety and distress which is almost characteristic. It is the expression not of pain, but rather of the apprehension of it. The patient is not anxious about himself, and no questioning gives evidence of any mental condition to account for it. He is in pain, and may be keenly alive to the fact that he is so; but the expression is more that of the dread and apprehension of pain than of its actual existence at the time. The cases in which this expression was most marked were those in which hyperæsthesia was also a marked symptom. So constant was this association that one could not but regard the anxiety and distress depicted on the countenance as the facial expression of that hypersensitive condition of the nerve centres which lay at the root of the hyperæsthesia.

The Eruption.—In typhus this consists of a mulberry rash coming out on the fourth and fifth day, not elevated, not disappearing on pressure, and persisting during the whole course of the fever, the intensity of the eruption being, as a rule, directly as the severity of the attack. So constant in its occurrence is the eruption in typhus, that its presence is regarded as almost essential to the establishment of the diagnosis. In typhoid the eruption consists of isolated rose-coloured spots, lenticular in shape, elevated, disappearing on pressure, coming out in successive crops, and appearing for the first time at the end of the first or beginning of the second week. It is frequently absent. In the thirty-four cases of cerebro-spinal fever which have been related an eruption appeared in 24, or 70 per cent. It consisted of spots of a rosy-red hue, of irregular outline, not elevated, disappearing on pressure. The spots varied in size from that of a pin head to that of a pea. Its general seat was the trunk and limbs; occasionally it was noted on the face and neck. There was no fixed time for its appearance; in one case it came out on the fifth day, in most it came out between the seventh and tenth days, but not unfrequently it was later in appearing. Neither had it any fixed duration; in a few cases it remained out only for one day, in others it came and went irregularly, but without disappearing; in cases in which it was more persistent, it generally disappeared some days before the commencement of defervescence; in a few, however, it remained out during the whole course of the illness, becoming darker in colour as the disease advanced, and towards the end of the illness bearing so close a resemblance to the typhus rash that it might, if seen only at that time, have been mistaken for it. In no case did it persist after death. There seemed to be no direct relation between the severity of the attack and the amount of eruption.

Petechiæ were noted in six of the thirty-four cases; in five the

petechiæ co-existed with the rose rash, in one they formed the only eruption. These six cases were all severe; three of them proved fatal—two of them dying of the fever, and one of a sequela.

Sudamina were noted on the chest and abdomen in a few cases.

Desquamation of the Skin.—A notable feature in many of the cases was peeling of the cuticle, often as free as what one is in the habit of seeing in scarlatina. It was most marked in the early days of convalescence, but sometimes commenced before the febrile symptoms had disappeared. It was earliest and most abundant on the arms and legs as a rule, but affected the whole body more or less. It did not linger about the hands and feet, as is the case in scarlatina. It was most abundant in cases in which hyperæsthesia had been marked.

Duration of the Febrile Symptoms.—In twenty-two cases which recovered, and in which the date of commencement of illness was accurately ascertained, the average duration of the fever, calculating to the time at which the temperature became normal, was sixteen days—the shortest nine, the longest twenty days. With the exception of the one case of nine days, not one had a less duration than fourteen.

In no case did a distinct crisis occur; defervescence was always by lysis, the process of defervescence occupying at least two days; a distinct amelioration in the symptoms, and a progressive decline of temperature being noted for two or three days before the temperature reached the normal.

With reference to the two modes of defervescence noted in fevers, it may here be observed that in diseases such as typhus and relapsing fevers in which there is no inflammatory local lesion, and nothing to delay defervescence after the fever has run its course, a distinct crisis—that is, a rapid defervescence—is common; while in maladies like typhoid and cerebro-spinal fevers, where a local inflammatory lesion is an essential and integral part of the disease, the temperature is kept up to a certain extent by this local lesion for a day or two after the fever has run its course; the fever may have run its course, and the poison cease to be reproduced; but the local inflammatory lesion cannot so abruptly decline—a few days are required for this. During these days the temperature is kept up a little by the remains of the local lesion, and defervescence is by lysis. On this view of the matter the mean duration of the fever in the twenty-two cases was thirteen to fourteen days.

The range of temperature presented no feature which could be regarded as distinctive or characteristic of the disease, and by means of which a diagnosis could be made between this and other forms of fever. The maximum height was generally reached by the end of the first week, and towards the end of the second it had begun to decline.

The highest temperature noted was 105°·5, and that point was

reached only once. In several cases it was above 105° ; but, as a rule, it ranged from 102° to 104° . The evening temperature, as in most fevers, was higher than the morning. Irregularity of range was an unfavourable indication here as in other fevers. In one or two cases a marked rise in the evening temperature was noted at the commencement of defervescence.

Symptoms referable to the nervous system occupied a prominent place, though not quite so prominent as one would be disposed to anticipate in a disease whose essential local lesion is inflammation of the cerebro-spinal membranes.

Pain in the head was one of the first symptoms. It was intense, and much more marked than in other forms of fever; it generally remained severe for the best part of a week, and then gradually diminished or passed away entirely.

Pain in the spine, with tenderness on pressure over different points, was frequently noted. This tenderness was more common over the cervical and lumbar vertebræ than over the dorsal.

Hyperæsthesia was present in a large proportion of the cases, the least touch making the patient wince, even the pressure of the bedclothes being irksome. With the cutaneous, there was also muscular hyperæsthesia, the slightest movement causing much pain. "I'm sore all over," was the common response to the question as to the seat of pain. These were the cases in which the peculiar anxiety of expression already referred to was most marked. Cases in which cutaneous hyperæsthesia was pronounced were also those in which subsequent desquamation was most free.

Tetanus, in anything like a distinct form, occurred only in one case, which proved fatal; but slight retraction of the neck was noted in several.

Delirium, when it occurred, was of the low muttering type, and was noted chiefly in cases in which death was threatened by asthenia. It was by no means a prominent symptom—not nearly so common as in typhus. It was most marked in patients who had passed middle life. Even in well-marked and pronounced attacks, the intellect was sometimes clear during the whole course of the disease. This may seem strange in a disease in which the cerebro-spinal centres are so materially involved; but it is to be noted, first, that the lesion of the nerve centres was, in all the fatal cases in which a post-mortem was obtained, limited to the membranes (in not one case was there evidence of disturbance of the cerebral substance); and, second, that this lesion was further limited to those portions of the nerve centres which are associated with the functions of organic life—the posterior cerebral lobes, the cerebellum, and the cord. The delirium seemed, in short, to be associated more with the general febrile state than with the local meningeal lesion. The peculiarities which that imparted to the illness seemed rather to be pain, sickness, hyperæsthesia.

Deafness was frequently noted, especially during the later stages,

and during convalescence, but not more frequently than in typhus.

THE HEART presented no special peculiarity. Increased frequency of action there was, of course; and in cases in which death was threatened by asthenia there was the same enfeeblement of the systole that is noted in such circumstances in other forms of adynamic fever.

THE LUNGS.—With the exception of one case in which pleurisy occurred, there was no inflammatory complication. Occasionally a slight bronchitic wheeze was noted, and a short frequent cough was very common. Though there was no lung lesion, the character of the breathing was peculiar and almost distinctive in well-marked cases. The change in it was distinctly of cerebral origin. It was hurried, catchy, and irregular; but its chief peculiarity consisted in the mode in which the expiratory act was performed: inspiration was shallow, and expiration premature, hurried, and forcible, as if it were a voluntary effort. In cases in which this character of the breathing was most marked, the patient generally complained of want of breath. "I can't get breath," was the expression used. Yet there was no external appearance of defective aeration of the blood, and examination of the chest revealed no evidence of physical disturbance of heart or lungs. The inspiratory act was insufficiently performed—it stopped short of the point at which the air-cells are filled, and was succeeded, or rather interrupted, by an abrupt, hurried, and forcible expiratory effort. It was the expiratory act that was unduly hurried; and its premature onset it was that seemed to occasion the feeling of want of breath, though probably the same disturbance of the respiratory centres that produced the change in the respiratory act aided in the production of this deranged sensation.

Epistaxis occurred in five of the thirty-four cases.

ABDOMINAL ORGANS.—*The Liver* gave rise to no symptoms during life, and in fatal cases showed nothing special beyond a slight increase of weight and a little darkening of colour.

The Spleen in fatal cases was always more or less enlarged, and was of softer than natural consistence. One case proved fatal by rupture of that organ.

The Kidneys.—Albuminuria was noted in seventeen of the thirty-four cases, exactly one-half. In none was there any blood in the water, and the albumen was not in large amount. In the later stages of the fever, and the early days of convalescence, there was frequently noted an excessive flow of urine, of pale colour, and of low specific gravity. It contained in such cases an increased amount of epithelial debris, and resembled the state of urine which is frequently noted in scarlatina.

The Bowels were generally constipated, though in several cases diarrhoea occurred. In all cases in which a post-mortem was made the intestinal glands were normal, except in the one man

who was suffering from tubercular disease of the bowel before the fever attacked him.

CONTAGIOUSNESS.—Though various instances are recorded, especially by German physicians, in which the disease seems to have been communicated by the sick to the healthy, the general opinion is that the disease is not contagious. The facts recorded in this paper distinctly show that the disease may be so communicated, though they equally show that it is not so contagious as typhus. In the case of the C. family, for instance, the father was the first to suffer. He remained at home and was nursed by his wife. During his convalescence she and six out of seven children were prostrated by the disease.

Then there are the M.'s, D.'s, and K.'s. The first to take ill was the girl M., who resided in lodgings; then her mother, who was most with her, was seized; then the married sister, Mrs D., who helped the mother to look after her; then come the two other sisters; then Mrs D.'s two children; then came the case of Mr M., who had come from a distance to see his family. Then came the cases of the K.'s, who lived next door to the D.'s, and were in constant communication with them. First the little girl, the constant companion of the D. girls, suffered; then her little brother; then the father; and, finally, a sister of his, who resided in another part of the town, but visited her brother and his family during their illness.

In the O'N. family there were four successive cases, occurring one after the other, in which the evidence of the communication was so clear that the medical man who saw them at their home thought that they were suffering from typhus, founding his diagnosis in part on the evident contagiousness of the disease with which he had to deal.

G. M. and his wife, in whose case the diagnosis was confirmed by post-mortem examination, contracted their illness from their daughter, who was treated at home for what was believed to be typhoid fever. They both took ill on the same day, three weeks from the commencement of their daughter's illness. She was nursed by them.

In the B. family the evidence of contagion was equally clear. H. was seized on the 2nd February, and came to hospital on the 10th; G. took ill on the 23rd, Mrs B. on the 24th, and C. on the 26th, the three last evidently contracting the disease from H. The nature of the illness was quite clear during life, and in Mrs B.'s case was verified by post-mortem examination.

Only one case originated in the hospital, that of C. D., and her attack was clearly due to contagion; for the four weeks immediately preceding her illness she had been the scrubber of the ward in which the female cases were treated; her duties led her to spend some considerable time every day in that ward.

Such is the evidence—ample, it seems to me—to prove that the

disease was communicated from the sick to the healthy. It did not tend to spread from house to house, and to become epidemic as typhus does; but it was communicated from individual to individual, and the risk of such communication seemed to be directly as the closeness and intimacy of the personal contact, and that is what constitutes contagion.

(To be continued.)

III.—SOME EXPERIENCES WITH THE ASPIRATOR.

By THEOBALD A. PALM, M.A., M.D.

THE following cases may be of interest as striking illustrations of the value of aspiration in certain conditions:—

CASE I.—A young Japanese man presented himself at the Medical Mission Hospital, Niigata, Japan, shuffling into the room with his body bent forward, supporting himself by his hands on his knees, and with a look of acute distress. It was difficult to extract any history from him, but he had a tense globular swelling containing fluid just above the pubes, and extending almost to the umbilicus. He stated that he passed water frequently and freely. Supposing this to be the overflow of a distended and paralyzed bladder, I passed the catheter at once. It entered the bladder without obstruction, and a few drops only of normal urine were evacuated. I then had immediate recourse to the aspirator, and by means of it relieved him of three pints of thick foetid pus. I could not satisfy myself as to the cause of the abscess. It must have been situated in the peritoneal cavity, circumscribed by adhesions. The patient was put to bed, and kept under opiates to keep the bowels at rest. No re-accumulation of fluid occurred. He left the Hospital in two or three days by his own will, and when seen later, no further symptoms had occurred. He was practically cured by a single complete aspiration of the abscess cavity.

CASE II.—A Japanese woman was admitted to Hospital, suffering from parametritis. After a few days, fluctuation was detected at the side of the womb by one finger in the vagina and the hand on the abdomen. A duck-bill speculum was introduced, and the trocar and canula of the aspirator were passed per vaginam into the abscess cavity. Three ounces of pus were evacuated by the aspirator. There was no re-accumulation; and after a further period of rest in bed the patient returned to her home cured, and saved from a long and troublesome illness by the early use of the aspirator.

CASE III.—Ruth L., an Englishwoman, single, aged 25, came

under my care as a parish patient on 15th Feb. 1885. She had been dismissed as incurable from a London hospital a few days before, and was said to be suffering from a fibroid tumour of the uterus. I found her with an abdominal tumour, connected with the uterus, slightly movable, evenly globular, and apparently a tense collection of fluid, imparting to the fingers a feeling of elasticity rather than of distinct fluctuation. No measurements were taken. The patient was fairly nourished; temperature normal. She had the anxious, pained expression of serious organic disease. Locomotion was difficult for more than a few yards. The catamenia appear at intervals of six to eight weeks. Breasts normal. There is dysuria and difficulty of retaining urine. Appetite is poor; she is subject to indigestion; is always constipated, and subject to hæmorrhoids. Sleep is very bad. Physical signs of chest are normal. No cough; breathing interfered with by abdominal tumour. Pulse feeble. Mental condition normal, but sometimes hysterical.

History.—Her parents are alive and well. She is one of seventeen children, of whom nine are living; all healthy. She enjoyed good health until June 1881, when, while in service as a domestic, she strained herself in lifting a heavy object, and from that time was subject to back-ache and pain in the lower part of the abdomen. She first noticed a swelling of the abdomen in Nov. 1881, when, after a wetting, she became dropsical. A medical man was consulted, who gave an opinion that she was pregnant. She left service in Feb. 1882, and came under another medical man, who negatived the idea of pregnancy, and treated her for “dropsy and palpitation.” The dropsy subsided by May, and, except for some fulness and occasional pain in the abdomen, she felt well and was able in November of the same year to go into service. Her strength again failed, the abdominal fulness increased, the catamenia ceased from Jan. to March 1883, when she consulted Mr Norris, then of Charmouth, who told her that she had an ovarian tumour, and recommended tapping. She had at that time a return of general dropsy. In May 1883 she was sent to the Hospital for Women, Soho Square, London, where she was under medical treatment until October, when she returned to her home, relieved of the dropsy, much improved in health, but still with a swelling in the abdomen, which gradually increased. In August 1884 she had an attack of persistent vomiting in which she brought up first her food, then brownish matter and blood, to the amount of about a quart. Similar attacks of vomiting recurred at intervals, lasting about two days, and leaving her prostrate. She was also subject to pains in the abdomen, with feverishness. She continued in a debilitated condition with occasional variations in health, free from dropsy, but with gradual enlargement of the abdominal growth, until she was again admitted to the Soho Hospital for Women on 28th Jan. 1885. She was now pronounced to be the subject of a fibroid

tumour of the uterus, and on 13th Feb. she was dismissed, surgical interference being considered unjustifiable. She was first seen by me a few days later. After correspondence with the gentleman under whose care she had been in hospital, I aspirated the swelling on 3rd March 1885, the medium-sized trocar and canula of Dieulafoy's aspirator being used. Three pints were evacuated of thick homogeneous pus, almost gelatinous, and very fœtid. The collection of fluid was completely evacuated, after which no trace of any solid growth was to be detected. The operation caused a sinking sensation, faintness with cold extremities. Shortly after she fell asleep for three hours, and, on awaking, expressed herself as feeling better than she had for three years. In a few days there appeared a fulness in the left hypogastrium, which increased, and was evidently a re-accumulation of fluid. She kept her bed for three weeks. Upon first assuming the upright position she experienced a sudden desire to evacuate something, and two pints of matter, similar to that which had been aspirated, were voided by the bladder. Similar discharges continued to take place, the quantity gradually diminishing, and the intervals, which were at first two or three days, lengthening, until she had been three months free from it. But there has always remained a rounded fulness in the left hypogastrium. She gradually regained health and strength, and was able in July 1885 again to enter domestic service, being to all appearance in perfect health, but liable to back-ache on over-exertion. In Oct. the swelling in the left hypogastrium appeared to be enlarging, and gave to the fingers an indistinct impression of fluctuation. On 29th Oct. an exploratory incision was made with the intention of inserting a tube if fluid were found. The anterior abdominal wall was found closely adherent to the structures beneath. It was difficult to explore the abdominal cavity without more interference than seemed justifiable. The trocar of the aspirator was then put from the wound into the abdomen in the direction of the fulness on the left side, but no fluid could be drawn out. The wound was closed and dressed antiseptically. It healed without further trouble. But the patient remained for some time weak, hysterical, and hyperæsthetic, and in December went to the Herbert Convalescent Home at Bournemouth, where she remained five weeks, and returned in excellent health. She has since continued well, able to attend to domestic work as a servant, and is now contemplating marriage.

The case is remarkable for the variety of diagnoses which it has occasioned, and for the happy result following aspiration. That it was ever a fibroid I consider out of the question. My first impression was that it was an ovarian cyst which had at one time ruptured and subsequently suppurated. Possibly it was from the first an abscess connected with the strain. There is no sign of disease of spine. The fulness in the left hypogastric region which remains

is probably either the remains of a cyst matted together with intestines, or simple inflammatory deposit with adhesion of the natural parts. In either case it is quiescent and stationary, and causes little or no inconvenience. It is matter of congratulation that the aspirator has been the means, both of clearing up a mistaken diagnosis and effecting a practical cure. It is difficult to see how aspiration should have led to subsequent spontaneous discharge unless there was an unintentional injury of the bladder, which, however, I feel sure was not the case.

Abscess of the Liver.—Two cases of abscess of the liver have come under my care, in which I have made use of the aspirator. The first of these occurred in Japan, in a young man who had been ill for some time, and had enormous enlargement of the liver when he presented himself, the lower margin of the liver reaching as low as the umbilicus. Abscess was suspected, and upon aspiration upwards of a pint of pus evacuated. It reaccumulated, and then an incision was made and a drainage-tube inserted on antiseptic principles. From that time he had complete relief of all his symptoms, but he died seven days later from exhaustion. The operation came too late to do more than promote the euthanasia.

The second case of hepatic abscess occurred in an English-woman, aged 55, whom I saw in July 1885. She was the wife of a publican, a strong, stout woman, who had been for many years troubled with a large ulcer of the leg. When seen on 24th July, she had been complaining for five days of pain in the region of the liver, and inability to retain food. Liver was enlarged, extending $2\frac{1}{2}$ inches below the ribs, and tender to palpation; temperature $100^{\circ}5$; skin slightly jaundiced; breathing rapid and shallow; heart and lungs sound; tongue coated; urine darkly stained with bile. Sinapisms were applied over the liver, and treatment was directed to checking vomiting and relieving pain. Calomel and saline purgatives were also administered with little effect, and on the evening of 27th July, after two days of very oppressive heat, she was in a very exhausted condition; pulse 130 per minute; diffusible stimulants ordered to be given frequently in night. On the 28th, seen in consultation with a neighbouring practitioner, it was agreed to continue saline draughts and to apply turpentine and linseed meal over the liver. The liver continued to enlarge; on the morning of the 30th, one part of the liver was less resistant to percussion and palpation, and in the evening fluctuation could be felt. The aspirator was used at once, and 20 oz. of thin pus of natural colour were evacuated. A pad was placed over the depression, which remained after aspiration, and fixed by broad strips of plaster, applied so as to limit the motion of the ribs. No real improvement resulted. The liver did not diminish appreciably. Oleate of mercury was applied over the liver. Euonymin and lactopeptin were administered. Quinine was also given, and stimulants as required. It is unnecessary to give all the details.

A second aspiration was practised on the 12th August, but four or five ounces of pus was all that had reaccumulated. The patient died exhausted on the 19th August. In this case aspiration was certainly beneficial in relieving the suppuration, but the hepatitis was intractable. Possibly there were other abscesses more deeply situated in the liver. No post-mortem examination was made.

In *Pleurisy with Effusion* I have frequently made use of the aspirator with the best results—in one instance having removed 80 ounces of fluid from the chest at once without any unpleasant symptom. I wish to point out that in certain cases it is advantageous to admit aseptic air into the pleura. It sometimes happens in aspirating the pleura that the continuance of the operation beyond a certain point causes acute pain and faintness. This is probably due to the presence of adhesions which are put on the stretch as the lung expands, and pull on a portion of the lung, or a portion of lung may be so firmly adherent to the parietes that it cannot expand. Evidently, in some way, the lung, or a portion of it, does not expand to take the place of the fluid which is being evacuated, and is consequently exposed to a severe atmospheric pressure, the strain of which it is not equal to bear. It occurred to me under these circumstances that there could be no objection to the admission of aseptic air into the pleural cavity to equalize the pressure of the atmosphere on both sides of the visceral pleura. It would be absorbed more readily than the liquid effusion, and allow the lung gradually to regain elasticity. Provided that nothing septic found its way with the air into the pleural cavity, no harm could result. Accordingly, in such a case, as soon as the patient complained of pain, I had a spray of carbolic acid directed upon the joint between the aspirator and the indiarubber tube leading to the canula. At the same time the indiarubber tube was pinched while the aspirator was detached until a few layers of carbolic gauze were placed over the end of the tube, and air was then allowed to enter the pleura. The entering air thus passed through a spray of carbolic acid, and was filtered by several layers of carbolic gauze. The entrance of air was followed by immediate relief to the pain, and the process of aspiration was again continued until the patient again complained of pain, when under the same precautions air was again admitted to the pleura. In this case the patient returned with a reaccumulation, which was again aspirated. It was smaller in quantity, pain was not complained of in evacuating it, there was no sign of putrefaction in it, but it was slightly turbid, due, I believe, to the fact that we got out the last of it, and that by gravitation the flocculent and slightly purulent part of the effusion was found at the bottom. After the second aspiration the fluid did not re-collect. In one other case of pleuritic effusion I have admitted air into the pleura in the same way when pain was complained of, and a second aspiration was not required. In contrast with these I remember one case in which, while I was super-

intending the process of aspiration, the aspirator was accidentally detached from the tube, and there was a sudden rush of air into the pleura. The patient was not under my care, and I had not the opportunity of watching the progress of the case; but I heard that the case took an unfavourable course, and in the course of some months the patient died. In practising aspiration I am always careful that the instruments used are thoroughly aseptic; and in withdrawing the needle or canula I surround it with a piece of lint soaked in carbolic oil, which is kept *in situ* as the dressing of the punctured wound. I also withdraw the hollow instrument while connected with the aspirator, and while the aspirator is still exerting suction through it, so that any current of air is outwards with regard to the wound.

In empyema aspiration is occasionally successful in so marked a degree, that it should be tried in all cases before more severe measures are resorted to. The following case is a happy illustration of this success:—J. R., a carter, aged 23, resident near Axminster, had signs of large effusion in the pleura on the left side, which was absolutely dull on percussion; the chest-wall bulged out, breathing on that side almost abolished, the heart beating to the right of the sternum; temperature, 102°. There was orthopnoea and distressing cough, with expectoration of tenacious mucus. He was much emaciated, and dropsical in the legs. He had been ill three or four weeks when seen by me on 30th May 1885. He was aspirated on the same day, and about a pint of thick pus, free from odour, was evacuated from the pleura. The first effect of the operation was to increase the cough and expectoration. This was due probably to the expansion of the lung. The chest was kept painted with iodine, and a stimulant and tonic prescribed. On 16th June he was again aspirated, and 10 ounces of pus removed. Under a course of tonics and diuretics, with a sedative and expectorant mixture as required, his health gradually improved. There was no more reaccumulation of pus, the cough ceased, the chest cleared up, the dropsy disappeared, he put on flesh, and three months after the first aspiration he appeared to be in perfect health. The apex beat of the heart had returned to its normal position. There was slight comparative dulness of the left side of the chest, due to thickened pleura, but the action of the lung was good. He has since continued in excellent health, and able to work as before.

IV.—DIPHTHERIA.

By W. WATSON CAMPBELL, M.D., F.R.C.P. Ed., etc., Duns.

(Read before the Medico-Chirurgical Society of Edinburgh, 7th April 1886.)

NOTWITHSTANDING all that has been said and written about diphtheria, and though it be conceded that most of those who have

contributed to the literature of the disease have helped to advance our knowledge, much remains unknown and much is *sub judice*. As, during the last twenty years, I have seen many cases, and have given much attention to this disease, I trust I shall be excused for venturing to offer a few propositions about it, even though I differ materially from others who have had abundant opportunities of studying it, and who are justly regarded as authorities.

My first proposition is—That diphtheria is primarily a local disease. The chief difficulties that come before me, in seeking to establish this proposition, are—the apparent absence of exudation at the outset, and when the general constitutional disturbance is great; the comparatively slight local distress in many cases (so slight as to be disregarded by the patient himself); the appearance of the exudation *after* the constitutional disturbance has been established. With reference to these difficulties I remark that the absence of exudation may only be apparent. I think those who have had much experience of this disease will corroborate the statement that, sometimes, only a small amount of exudation can be seen even when there is great general distress; and, I believe, a sufficient amount to cause this distress may, for a time, escape observation. The exudation may have begun in a pharyngeal sulcus, and have caused the constitutional disturbance, whilst it did not appear until, by extent of growth, the sulcus was no longer able to conceal it. Again, while apparently the local manifestation of disease may be so slight as to be out of comparison with the great systemic disturbance, I have seen at least one case where the local suffering was so slight as to cause no complaint, but in which the exudation was really extensive, and quite in keeping with great constitutional disturbance.

When called on to attend a member of a family suffering from diphtheria, I make a point of examining all their throats, and continue to do so occasionally during my attendance. I have sometimes, in this way, discovered the exudation before the patients were aware that there was anything amiss—certainly before any constitutional disturbance was complained of. I have just referred to a case where there was a great amount of exudation, and where the general disturbance was proportionally great, but which was peculiar in this—that the patient did not complain of local distress; and as this case tends to prove that the latter condition may, for a time, be overlooked, I shall briefly narrate it, as it certainly impressed me much. I called on a lady four or five days after her first confinement, and found her very seriously ill, as indicated by a pulse of 120 and a temperature of nearly 105°. Her puerperal progress was satisfactory, but, while puzzled to account for high pulse and temperature, the nurse remarked that she had complained a little of her throat the previous night. The patient, who had said nothing about her throat before, now said that it “was a mere nothing;” but, on examining it, I found the left

tonsil and pharynx, and part of the right tonsil, covered with a thick diphtheritic exudation. In this case there was certainly a little complaint of the throat before I saw the patient, but she had to be reminded of it, by the remark of the nurse, on the occasion of my visit next day. Here the local disease was overwhelmed by the constitutional disturbance, and I admit that I might, after prescribing for general symptoms, have departed in ignorance of the true state of matters, but for the casual remark of the nurse. Had I done so, and, next day, from extension and complaint of local disease, discovered the exudation, it is possible that I might have considered it second in point of time. I think there must have been similar cases met with in the experience of other physicians.

Again, there is a tacit acquiescence in this proposition, if I am at liberty to base this statement on the general practice of the profession as regards treatment. I think that the rule is that, from the first appearance of the exudation, it continues to be as carefully watched as the general symptoms, and that it is subjected to special treatment—the increase of the exudation being dreaded, while the gradual disappearance of it is regarded as one of the most hopeful signs of recovery. Further, I think it will be admitted that the more quickly this exudation is got rid of there will be less risk of secondary local disease, such as glandular swelling, cervical cellulitis, and the more remote paralysis.

Second Proposition.—That there is not a so-called period of incubation: that, as soon as the local irritation begins, the constitutional symptoms follow, resembling in this respect the presence of a foreign body, or the irritative contagium of vaccinia.

Third Proposition.—That, supposing it due to infection, however arising, like scarlatina, typhoid, or small-pox, it differs from these in one very important particular: that, while one attack of any of these diseases seems to eliminate a mysterious specific pabulum, and so secures immunity from recurrence, or recurrence of much less intensity than the first attack, diphtheria, on the other hand, leaves the patient for a considerable time more susceptible of the disease. This fact I have frequently observed. Without asserting an explanation, I may be allowed to suggest one. There are, of course, two things to be borne in mind when considering infectious disease—susceptibility and the presence of or exposure to infective material. Now if, during the prevalence of an epidemic, all exposed to infection were equally susceptible, all would be likely to be affected; but we know that the degree of susceptibility varies in different individuals, and even in the same individual at different times. In this way only can we account for the fact that, having escaped at one time when exposed to infection, some may have the disease at another time when less exposed to it. I am therefore inclined to think that the liability to recurrence for an indefinite time after an attack of diphtheria is due, in the first place, to the

parts being left in a more susceptible state, which is still further heightened by colds; and, in the second place, to the existence and accessibility of spores or germs. One swallow does not make a summer, but one case which I will mention is corroborative as far as it goes. Two or three years ago I attended a girl, about six years old, for diphtheria. After recovery she caught cold and had the disease again. This occurred frequently. The house in which she lived was a comparatively recent erection, and seemed all right, but the frequency of the recurrences led me to advise that the sewers should be carefully examined. This was done, and they were found in a very unsatisfactory condition. Without delay all was put right, and though the child has had colds many times, she has had no more attacks of diphtheria.

Fourth Proposition.—That diphtheria is parasitic and fungoid in character. I admit that I have been led to this conclusion by close observation of its progress under treatment, and not by microscopic examination. I have never heard or read of an exudation appearing on a spot not accessible to air, which is essential to such growth; and, acting on this assumption, I have succeeded in curing the disease simply by excluding air. I have only seen two cases of diphtheritic conjunctivitis. These occurred about the same time, but in different families living about ten miles apart. In both families I had cases of diphtheria, with the so-called exudation in the throat. One was that of a girl about 11 years of age, the other that of a young man about 18. In both, the feelings of the patients and appearance of the eyes were alike. Both complained of heat and tenderness rather than pain, both conjunctivæ were injected a good deal, and the patches were nearly of the same size,—about the eighth of an inch in diameter—and rather thick, and of a dirty yellow colour. Believing the patches to be diphtheritic, and also that the disease was due to fungoid parasite, I treated both in the same way. I saturated a sufficient quantity of absorbent wadding in a solution of permanganate of potash, and put it over the closed eye of each patient; over this I put another quantity of dry wadding, and fastened all with a bandage which I did not remove for, I think, five days. On removing this dressing and bathing the eyes with tepid water, all seemed right, and continued so; neither gave me further trouble. In the *British Medical Journal* of 12th December last, Dr Lord reports a case of genuine diphtheria which he treated successfully by painting the exudation frequently with tolu varnish, as recommended by Dr M'Kenzie. In this instance the disease was treated as a *local disease*, and the success of the treatment seems to have been due to the *exclusion of air* by the varnish.¹

If my first and fourth propositions be correct, they should have

¹ Taking this view, I think the recoveries after tracheotomy, for diphtheria, may be owing to the respiration being carried on below the seat of the disease.

an important bearing on treatment. If the disease be at first local, attention should be mainly given to it, in the hope that early removal will prevent or check the development of constitutional disturbance. Again, if I am correct as to the nature of the disease, it is evident that it will require to be as closely watched during night as during day, for it will grow as much when the patient is asleep as when awake. Diphtheritic patients are sometimes unusually drowsy, and the physician is tempted to give way to the feelings of the patient, and, while treating the general symptoms, assiduously avoid giving trouble by frequent examination of the exudation or growth. I have treated my patients for many years as if I were right on both these points, and the result has been thoroughly satisfactory.

In the *Edinburgh Medical Journal* (February 1867) I advocated the use of permanganate of potash as a gargle, and since that time have relied on it solely for local treatment. I am persuaded that, if properly used, nothing will be found superior to it. I am quite aware of the danger of severe criticism to which I expose myself in using such words, but I do so deliberately. I say—*if properly used*; everything depends on this. The strength of the solution I use is $\frac{1}{2}$ gr. to the ounce, and it must be used so as to reach and play over the entire pharynx. This can only be done by causing the patient to throw the head well back, and keep the mouth open to the fullest extent when gargling. At least two ounces of the solution must be used every time, and as much as four ounces, if it do not distress the patient. Then, again, I insist on its being repeated night and day every two hours. For this purpose the patient must be wakened up very often. Of course this is annoying, but it is absolutely necessary, for, if it be not done, and sleep be allowed for six or eight hours at a stretch, on examining the throat the exudation will, in a large number of cases, be found more extensive. I have never ceased to insist on the importance of this very frequent use of the local application since I found the advantage of it in my own case,¹ and I was much impressed also by the necessity of it in the following:—I was asked to visit a child about four years of age, said to be suffering from croup. On doing so, I found him dying from diphtheritic laryngitis. Next morning his mother complained of her throat, and, on examining it, I found large patches of exudation on both tonsils. She at once began with the gargle, and used it faithfully till night, when not more than a third of the exudation was to be seen. She was allowed to sleep all night, and in the morning the patches were as large as ever. Gargling was resumed, and at night she was again much better, and the exudation much less. Again she was allowed to sleep without being disturbed, and in the morning she was worse, and the exudation at least as extensive as when I first examined it. On learning that she had not used the gargle during

¹ *Journal*, February 1867.

night, I gave strict orders that it was to be persevered with night and day, and the result was that the exudation was gone within forty-eight hours, and the patient almost quite well.

In a great number of cases the patients are too young to gargle satisfactorily, yet a tractable child can soon be taught to do so. I had a patient, a short time since, under 4 years of age, who soon learned to gargle properly; but, where this cannot be done, I advise swabbing with a solution of double the strength. This process, to be successful, requires special care also. I remember persuading a professional friend to try it, and after doing so, he told me there was no benefit from it. I saw the patient with him, and was not surprised at his want of success. The solution was in an open tumbler—a bent hair-pencil was lying in it; this pencil was taken from the tumbler and applied to the throat, and then returned to the tumbler. Of course, the solution was soon rendered useless. For the purpose of swabbing properly, I use a wire about the eighth of an inch thick, slightly flattened at the end, and bent in a curve to suit, conveniently, the passage into the pharynx. After fixing a sufficient quantity of absorbent wadding, by twisting it round the flattened end of the wire, I press the swab, thus made, firmly on the palm of my hand to make sure that the end of the wire is sufficiently covered and padded; then, dipping it in the solution, I get the mouth well opened, and pass the swab right down the throat. This causes no pain, is not attended with risk, and, if done properly, the pharynx will close on the mop and compress it. After withdrawing it, I burn off the wadding, and make a clean new swab. This little operation should be repeated as frequently as the gargle.

I have often wished I knew of a way to use this remedy in cases where the disease elects or extends to the air-passages in very young children, but I know of none. I have, however, used it successfully in two cases—one patient a lad of 18 or 19, and the other a girl of 13—by atomizing the solution by means of a simple vaporateur. The former patient had been suffering from diphtheria in the pharynx for some time before I saw him. I was only called in after the disease had extended to the larynx and seriously affected respiration. I thought the spray might be of service in this case, and, having procured one of these simple toys—made of two glass tubes at right angles—I told the patient to open his mouth widely, and breathe as fully and freely as he could, while I blew the spray right into his mouth. His mother was not long in learning how to use it, and he made a steady and rapid recovery. The other patient is just convalescent. The symptoms in both cases were very severe and urgent; both were aphonic, and could only faintly whisper; rough, hard, grating cough and stridulous breathing caused both great distress. The double-celled india-rubber hand-spray would act much better, as there would be no break in the supply of spray, such as occurs when the operator, with

the vaporateur, requires to take a deep inspiration. The strength of the spray solution used in both cases was 1 gr. to the ounce.

I may here mention that, for some years, I was in the habit of administering to my patients tinct. ferri perchlor. as an antiseptic, and also of giving wine, in varied quantity, every four hours. Whilst treating my patients thus, I sometimes had great trouble with general pharyngeal oedema, and I imagined that the contact of the medicine or the stimulant with the tender throat had something to do with this. I therefore stopped both, and, strange to say, I have not had a serious case of the kind since. Under the treatment I recommend the disease is very quickly mastered, and meat-teas and milk are quite sufficient to sustain the patient. To check or remove constitutional disturbance, I rely on sulpho-carbolate of soda, in 20 gr. doses every four hours for an adult, and 1 gr. for each year for children.

I would like much if this treatment had a fair and extensive trial. I am quite confident the result would be such as to encourage a continuance of it—even if it did not lead to the adoption of my views as to the nature of the disease.

V.—ON AN IMPROVED METHOD FOR THE DETECTION OF THE TUBERCLE BACILLUS IN SPUTUM.

By R. W. PHILIP, M.A., M.B., M.R.C.P.E.

(*Read before the Edinburgh Medico-Chirurgical Society, 7th July 1886.*)

WHILE several of the modes at present in use for the detection of the bacillus tuberculosis are excellent, a certain amount of difficulty and awkwardness accompanies the usual line of procedure. Every one who has had much experience must have met with instances where such hindrance was considerable, the difficulty being largely due to (*a*) the comparative paucity of the micro-organisms in relation to the other cell elements and the surrounding mucus, and (*b*) the extremely tenacious character of the mucus, which renders it no easy matter to obtain a suitably thin and equal layer on the cover glass.

The method, whose description follows, will be found to obviate both these inconveniences. It has the advantage, moreover, that in doubtful cases it renders the demonstration a matter of greater certainty.

The principle is essentially that of concentration, the concentration being obtained by a double process of incubation and precipitation or deposition. It is thus practically the same principle as that followed in the examination of the urine for tube casts and other solid elements, the peculiar character of the secretion in the

case of the sputum making the carrying out of the principle more complicated.

The sputum of from twelve to twenty-four hours is carefully collected and kept as free from the access of foreign particles as may be. It is then exposed in a beaker or flask to the influence of a gentle moist heat for twenty-four hours, or longer if necessary. The mouth of the vessel should be protected with a thin piece of gauze, which permits the free entrance of air and moisture, while excluding the grosser impurities. The continuous exposure described may be most conveniently managed in a Koch's steam sterilizer, as used in bacteriological work, but this is not essential. Proximately good results may be obtained by a more homely arrangement, such as every kitchen will afford. In practice, I have found that the temperature best suited for the process ranges from 36°C.-39°C. I had adopted this range as that corresponding roughly with the range met with in an ordinary case of tuberculosis pulmonum, where we assume the organisms flourish luxuriantly. I have since discovered that Koch assigns 37°C.-38°C. as the optimum temperature for the growth and reproduction of a pure cultivation of the bacillus.¹ Though this range gives doubtless the most satisfactory results, considerable latitude is permissible where the arrangements for exact work are not so perfect—the limit for growth of the tubercle bacillus being fixed by Koch at from 28°C.-42°C.

At the end of twenty-four hours it will be found that the appearance of the sputum has altered considerably. The heavier cell elements have separated and become deposited at the bottom of the vessel, while above this is a uniform layer of comparatively clear fluid. The alteration is most strikingly seen when the sputum subjected to the process was previously uniformly purulent and the individual portions nummular in form. The clear supernatant fluid may be decanted, or by means of a pipette a drop of the thick deposit may be removed from below and placed on a cover glass. It will be found that the drop has no longer a cohesive character, and may be spread with much greater ease and exactness as a uniform layer on an apposed pair of cover glasses. These, when dried, are stained and mounted according to any of the approved methods. Microscopic examination then reveals the advantage of the procedure. The heavier cell elements in their deposition have carried down the micro-organismal elements, so that the drop contains these latter in relatively increased number. I have found in some instances that the consequent multiplication has been five times or even more.

While this increase is to be attributed in large part to the precipitation and resulting concentration, I am inclined to think that there is also an absolute increase, which is to be regarded as

¹ Koch, Dr R., quoted by A. de Bary, *Vorlesungen über Bacterien*, Leipzig, 1885, p. 40.

due to the process of incubation to which the sputum was subjected. For in addition to the evident multiplication, I have been able to trace what appear to be signs of more active proliferation. This may seem to be opposed to the observation that the growth and development of the tubercle bacillus in artificial cultivation, *e.g.* on blood serum, is but slow. It may be, however, that the sputum is a medium better suited for its development. The fact of the extreme abundance of the organisms in the sputum in certain cases lends support to this view. In some of the preparations, in addition to the signs of increased number, the grouping and the variety in size and shape is very striking. The scope of the present paper, however, forbids my entering more fully on this interesting point.

At first sight the process, as I have described it, appears lengthy. In reality, I believe it to be more expeditious, the preliminary steps not necessarily involving any special preparation. It is rather a question of delay. The latter part is a distinct advance on the older method, as (a) allowing the detection in all cases to be more rapid; (b) insuring a greater probability of success in doubtful cases; (c) overcoming some of the minor difficulties which are inseparably connected with the other methods.

VI.—THE BRONCHIAL CATARRH OF CHILDREN.

By JAMES CARMICHAEL, M.D., F.R.C.P. Ed., Physician to the Royal Hospital for Sick Children, Edinburgh University Clinical Lecturer on Disease in Children.

(Read before the Medico-Chirurgical Society of Edinburgh, 7th April 1886.)

(Continued from page 337.)

I HAVE already sketched the symptoms of bronchial catarrh, whether of a slight or severe character, and in order to a recognition of the occurrence of catarrhal pneumonia it is necessary to keep them in remembrance, and to note the changes in the clinical features of the case which the supervention of catarrhal inflammation of the alveoli gives rise to. Let us, by way of illustration, again picture the case of child suffering from extensive bronchial catarrh. The hurried breathing, the constant harsh cough, often paroxysmal in its nature, the accelerated pulse, the anxious and distressed look, the disinclination for food or playthings, the foul tongue, the unhealthy stools, the more or less frequent vomiting of undigested food and mucus. All the while the temperature is not very high, ranging from 99° to 101°, with no great variation, its ratio to that of the pulse being pretty constant. Let us note the changes which take place in the supervention of catarrhal pneumonia. Its onset is signaled by a marked change in the symptoms

from those of the ordinary bronchial catarrh which has preceded it. Probably one of the first noticeable alterations in the symptoms is the cough, which invariably changes its features. It loses its purely bronchial character, and becomes shallow, short and hacking, and apparently accompanied by pain during the act. The cough may be more frequent—often very constant—and irritating, but sometimes one of the most characteristic features is its diminished frequency. At the same time the respirations are much accelerated and shallower than before, running up to 50 or 60, or even more, in the minute—the *alæ nasi* acting rapidly. The pulse becomes much quicker, and its ratio to the respirations markedly perverted. The temperature rises to 103° or 104° , or even higher, and at the same time alters as regards its type. From the comparatively regular temperature of bronchitis it becomes markedly of an irregular type with decided remissions, the rise generally occurring in the evening with considerable morning fall. In no class of cases is the graphic method of recording temperatures of more value, as by it alone we can often diagnose the supervention of catarrhal pneumonia. The child lies quietly and does not cry so much, nor does it resist physical examination to the same extent as before. This is always a serious sign in acute lung affections in the child. There is generally considerable disorder of the digestive functions of a nature already referred to in uncomplicated severe bronchitis. The physical signs next demand our attention. We can generally acquire valuable information in these cases by simple inspection of the chest. In normal



FIG. 5.—Acute Catarrhal Pneumonia in a Child, aged 2; Recovery.

respiration in young children, what strikes the observer at once is the comparative absence of thoracic movement as compared with the adult, the respiration being chiefly abdominal. In collapse of the lung and catarrhal pneumonia the movements of the thoracic

walls are generally characteristic, the indrawing or retraction of the ribs and intercostal spaces during inspiration being distinctly marked, more especially in rickety children, where the softness of the bony framework of the chest brings this into greater prominence. The retraction is noticed chiefly in the lower lateral parts of the chest. On auscultation and percussion the signs vary very much according to the extent of the disease, the number of lobules affected, their contiguity to one another, and their proximity to the chest wall. In some cases where the patches are small and not near the surface, the signs of consolidation are not well marked or altogether absent, and we are forced to base our diagnosis on symptoms alone, which, if they are of the characteristic nature already described, leave little doubt as to the true nature of the case. As a rule, however, physical signs are sufficiently distinct. The percussion note loses its natural resonance, and becomes impaired in proportion to amount of consolidation and the proximity of the patch to the surface. Where much healthy lung substance or surrounding emphysema intervenes between the consolidated portions and the surface, the resonance may appear natural or little impaired. On auscultation crepitant *râles* are heard accompanying both inspiration and respiration. These are very different and much coarser than the fine crepitation heard at the end of the inspiratory act in croupous pneumonia. The *râles* persist during the whole course of the disease, and do not disappear, as in croupous pneumonia, at its height. The respiration is usually of a broncho-vesicular character, and the voice resonance intensified.

Catarrhal pneumonia, unlike the croupous disease, is of indefinite duration, without any distinct crisis. The further progress of such cases is generally characterized by the more pronounced nature of the symptoms. The physical signs usually become more distinct as the pneumonic areas enlarge or coalesce. When the child recovers it does so slowly, a gradual improvement in both symptoms and physical signs becoming manifest. If within a fortnight there are no signs of abatement, the case generally runs a subacute course, and may terminate favourably at the end of six or seven weeks; or the disease may become chronic, convalescence being indefinitely delayed; or it may be ultimately complicated by the supervention of tuberculosis.

I have already referred to gastro-intestinal complication in the bronchitis of children, and shall make a few additional remarks on it before passing to the subject of treatment. I should like to emphasize the importance of the gastro-intestinal complication of the bronchial catarrhal affections of children, not only on account of its frequent occurrence, but of its danger and the necessity of early recognition and prompt treatment. A catarrhal condition of the stomach or bowels, or of both combined, is present in a large proportion of cases of bronchial catarrh. Such complications seriously interfere with the assimilation of food, and increase the

febrile disturbance and general distress of the child, and often lead indirectly to a fatal termination. The catarrh is essentially secondary in its nature, and probably induced by the swallowing of the irritating secretions from the bronchial tubes. Young children, as is well known, do not expectorate but swallow the mucus, and the frequency of the occurrence of gastro-intestinal complication is, I believe, in direct proportion to the infrequency of vomiting in these cases. Every one who has had much experience of bronchial catarrhal disease in children know the relief experienced after vomiting, the expectoration being thus removed, and an obvious source of irritation got rid of. If the child does not vomit from time to time, and bring up the catarrhal secretions which have been swallowed, a secondary catarrh is apt to be set up in the stomach, often extending into the bowels, causing indigestion and diarrhoea, with defective assimilation of food.

The usual signs of gastro-intestinal catarrh are well marked, the tongue red and thickly coated at first, sometimes desquamating afterwards, nausea, disinclination for ordinary food, thirst, vomiting, with more or less mucus sometimes streaked with blood, diarrhoea, offensive stools, deficient in bile, with undigested food and mucus, often becoming more watery as the case goes on. When there is vomiting alone, the complication is not so serious as when the catarrh has passed down the tube and you have constant diarrhoea. In any case, as I have already said, these complications add greatly to the gravity of the case.

The treatment of bronchitis and its complications must now demand our attention. At the outset, I need hardly say that a correct recognition of the exact physical condition we have to deal with in the lung is a necessary preliminary to successful treatment. I shall allude to the management of such cases under three heads—Hygiene, Diet, and Medicine—and in the order of their importance, for I believe that in this class of diseases in children the administration of drugs is of secondary importance to the details of hygienic and dietetic management, and, as in the treatment of disease in children generally, more success in practice is derived from the attention to little details than anything else. In treating of cases of pulmonary collapse I have already made reference to the treatment adopted, and, as it differs in some respects from that of ordinary uncomplicated bronchial catarrh or catarrhal pneumonia, I shall now allude to the principles on which it is generally agreed such cases should be treated. The end we desire to attain in a case of acquired atelectasis is, if possible, reinflation of the collapsed portion, and there can be little doubt that in a certain proportion of cases this can be brought about. I believe in many of those cases, examples of which I have recorded, where in the milder cases of bronchial catarrh the smaller tubes remain unaffected, sudden collapse occurs, prompt and energetic measures will suffice

to restore the lung to a natural condition. In extensive capillary bronchitis it may be doubted whether complete or partial reinflation ever takes place. The first indication in treatment is to promote and encourage free respiration, more especially the act of inspiration. For this purpose the child's clothing must be light and loose, the abdominal bandage in infants should be removed. The child should be made to lie on the sound side in the case of one side only being affected, so as to allow the affected side full play. It should not be allowed to sleep or lie too long, such children being often very drowsy, but should be taken up at intervals, and made to cry if possible. The nurse may be instructed to cool her hand by placing it in cold water and applying it suddenly to the chest, in order to induce a sudden inspiration. The room should not be too hot, and well ventilated. Stimulating epithems may be applied to the chest, such as hartshorn, mustard, or turpentine. The child should be fed regularly with food suitable to its age. Sucking babies often refuse to take the breast, and need to be fed with the spoon. In any case the child generally shows a disinclination for food, and only takes a little at a time, and therefore should be fed more frequently. Whatever be the age of the child, it generally requires stimulants, and a few drops of brandy, or in the case of a sucking infant sac whey, should be given. The most serviceable medicines are those of a stimulating nature, such as sp. ammon. arom., or subcarbonate of ammonia, which should be given in small doses, frequently repeated. Belladonna is undoubtedly of use in those cases of collapse occurring suddenly in slight catarrh in comparatively healthy children, more especially where we have reason to believe there is temporary occlusion of the tubes from nervous, spasmodic, or reflex causes. The drug should be given in full doses, and repeated with sufficient frequency to insure a sedative effect. Its influence in this class of cases is generally most marked in diminishing the tension of the bronchial muscles and allaying reflex excitability, thereby facilitating the ingress of air to the collapsed portions. The drug is of no use in the more serious cases of collapse occurring in capillary bronchitis accompanied by catarrhal pneumonia.

In *acute bronchial catarrh* the hygienic management first demands attention. The cot should be placed, if possible, in a corner of the room near the fire, the room must be properly ventilated, and the temperature maintained at a range of between 65° and 70°. The child's clothing should consist of a warm flannel night-dress if in bed; in the case of an infant in arms it should, in addition, be kept in a light woollen shawl or blanket extending below the limbs; the belly binder should be removed. The atmosphere of the room should be kept moist. The main indications of treatment are to arrest the progress of the disease and prevent its extension to the smaller tubes, to favour secretion and increase fluidity, or, if you like, diminish viscosity of the discharge from

the inflamed mucous surface. Various measures may be adopted to effect this. If the child be an infant, and remain a good deal in the nurse's arms, she should sit at the side of the fire. A bronchitis kettle may be kept steaming on the fire. There are other means of equal efficacy in moistening the air, and one of the best is keeping a small screen—a clothes screen answers the purpose well—around the child, and covering it with a wet sheet. Very rapid evaporation takes place, so that the sheet, provided the temperature of the room be kept high enough, requires to be redipped every hour or hour and a half. A flat sponge bath, with about an inch deep of water in it, may be kept in the centre of the room or near the bed. When the child is in its cot we must modify our plan so as to suit the situation by surrounding the cot with a tent, and there are two methods generally adopted of moistening the air. We may either keep a kettle steaming into the bed, which I think the least efficient of the two, or hang wet towels all round the inside of the cot upon a cord suspended for the purpose. After a trial of this method for many years, I can with confidence recommend it. By this means the air of the cot is kept quite as moist, if not more so, than by means of the steam kettle, which I now seldom use in Hospital except in croup cases, in which, after tracheotomy especially, we can direct the steam close to the tube if necessary. Having placed our patient under favourable hygienic conditions, the question of feeding should next be attended to. The child should be put upon light nourishing food suited to its age, and only such quantity administered as it is able to digest. Suckling children require little change in feeding unless signs of gastro-intestinal catarrh show themselves, when suitable alterations must be made according to circumstances. In spoon babies the diet should consist of light soup, beef, chicken, or veal, tea and milk, whisked white of egg, etc., all farinaceous food should be interdicted, as it is apt to favour the production of indigestion. As a rule solid food should be either withheld, or given in only small quantity at long intervals. Care must be taken in any case not to overload the stomach, but rather to feed frequently in small quantities; this is particularly necessary in gastro-intestinal complications. In such cases the milk should either be alkalized with bicarb. of soda, or lime water, or peptonized. The stools should be regularly examined from day to day, and if unnatural, the food must be altered either as regards quality or quantity. In gastro-intestinal catarrh, besides careful regulation of feeding as to both quantity and quality, we ought to administer, if need be, such remedies as bismuth, or aloes, or rhubarb, combined with alkalies. Occasionally a dose of hydrarg. c. creta or calomel may be indicated. In intestinal catarrh the combination of hydrarg. c. creta with pulv. ipecac. c. opio is useful. One or two grains of dried sulphate of iron, as recommended by Dr Eustace Smith,¹ is

¹ *Disease in Children.*

often of service, given every four hours in mucilage, in the gastric form of catarrh.

The question of the administration of stimulants in children is important. The condition of the pulse and the general nerve tone of the child in connexion with the extent of the disease or nature of the complication must be our guide. It may be stated generally, that in most severe cases of bronchial catarrh of long continuance, and in catarrhal pneumonia, stimulants are required in greater or lesser quantity sooner or later. Whenever the pulse becomes compressible or irregular the indication is clear for their administration, and frequently at the same time it may be desirable to give a few drops of tinct. of digitalis. Brandy on the whole is the most useful stimulant, generally preferable to wine. It should be given in small doses, frequently repeated, along with food, and its effects carefully noted. If wine be used, the time-honoured sack whey is as good a form as can be selected.

I should like next to allude to external applications. Acute bronchial catarrh in children is generally relieved by rubefaction of the chest, and local diaphoresis produced by suitable means. By keeping the cutaneous capillary circulation in a state of activity, we have a ready and direct means of relieving the congested condition of the pulmonary circulation. Rubefaction may be produced by the application of sinapisms, care being taken not to continue this too long in case vesication takes place, which is apt in infants to result from their too potent or prolonged application. Mustard is one of the most ready and efficient means at our disposal, and as a rule it is best applied in the forms of the ordinary cataplasma sinapis, of the strength of one part of mustard to four or five of linseed meal, made into a jacket poultice, and kept on till the skin is well reddened, from fifteen or twenty to thirty minutes, until the necessary effect is produced. Rubefaction may be produced also by the application of diluted lint. ammoniæ or lint. terebinthinæ, in which case the liniment should be painted over the entire chest, which is afterwards encircled with cotton-wool. Having produced rubefaction of the cutaneous surface, our endeavour should be to keep up the activity of the skin and avoid any revulsion or chill. The time-honoured poultice of linseed or other emollient substance applied in the form of a jacket is a means of doing this, but I think neither the most convenient nor suitable for the purpose in the majority of cases. My objections to linseed poultices in young children are that they are heavy, dirty, and unctuous, and do not keep up the action of the skin so well as other applications to be hereafter noted. Another objection to poultices is that, except in hospital, or in private practice, when you have the advantage of a skilled nurse, it is difficult to get them properly made and applied. A poultice badly made and improperly applied, and allowed to get cold, is worse than useless. Another

objection is, that in young children, who are constantly moving, and require perhaps to lie in the nurse's arms, the poultice is apt to get crumpled up and lumpy. I am quite sure I have seen the most evil results in private practice from the careless application of poultices, and I consider it to be the duty of the practitioner, if he think it desirable to order them, to see that they are properly made and applied. It is not sufficient to write a prescription and order a poultice, but to see the details of treatment carefully carried out in every respect. The practice that I have now followed out for many years, and which I notice is now in favour with other practitioners in treating the acute bronchial and other chest affections in children, is, after suitable rubefaction of the surface has been produced, and the secretion of the skin excited to activity, to encase the chest in a light cotton wool jacket. This serves the purpose of keeping up a uniform temperature on the surface, and answers admirably. The jacket may be made and applied in three different ways; the cotton wadding, which must be the common sheet wadding used by tailors and dressmakers for padding, may be basted on a fine cotton or linen jacket, or on to a thin macintosh cloth jacket, or this jacket, instead of being applied dry, may be squeezed out of water before application, in which case we have a clean and light poultice, which can be worn continuously. In choosing your method of application I am in the habit of being guided by the condition of the skin. If with the simple jacket it does not act sufficiently, the substitute of the macintosh covering generally produces sufficient diaphoresis for our purpose, if not, the cotton wool may be moistened in the way indicated. In applying the wet cotton wool jacket the wool requires renewal every second day, perhaps oftener. If preferred, soft old linen may be used instead of cotton wool, and then we have an application exactly similar to the ordinary abdominal compress. Whatever measure we adopt to attain the desired end, I hold that it is beneficial in these acute chest cases to stimulate the action of the skin and keep up local diaphoresis. Medicated cotton wool is often of service. Salicylic wool, or pinewood oil wool may be used. A very convenient and ready method of medicating the cotton is to sprinkle over the jacket before it is applied a few drops of oil of eucalyptus, pinewood oil, or terebene. Whichever method is adopted, I feel sure that these applications are in the case of children more suitable and convenient in every way than the old emollient poultices. I have not yet had the opportunity of trying cold compresses or ice-bags in the pneumonia of children, but from the success of the practice in certain cases in the hands of others, I should think it to be justified. *Other outward applications* may be of service, especially dry cupping, or the application of one or two leeches in the interscapular region or over the base of one or other lung. Local bleeding is especially useful in some cases of pneu-

monia where there is evidence of impediment of action and congestion of the right heart. Impending death may be often averted by timeous local depletion in such cases.

The administration of drugs in acute bronchial catarrh and its complications demands careful consideration. The routine treatment too often in vogue of giving ipecacuanha or squill cough mixtures, with the indiscriminate application of poultices, cannot be too strongly deprecated. Every case should be treated strictly on its own merits, and with due regard to the constitutional peculiarities of the child, remembering the principle which we cannot too often recall, that it is not so much the disease that we have to treat, as the disease as it exists in the patient specially under observation at the time. In hospital practice, where one is untrammelled by the necessity of ordering drugs to please the patient or his friends, I very often treat ordinary cases of mild bronchial catarrh without the administration of any medicine except an aperient, or it may be an emetic, trusting solely to hygienic and dietetic management on the lines I have already indicated. In severe cases, however, the benefit derived from carefully selected therapeutic measures is of great value.

The classes of drugs of special service belong to the emetics and expectorants.

Emetic remedies are among the most useful and powerful means at our disposal of promoting the bronchial secretion and emptying the tubes. They must not be used as a routine practice in all cases, but with discriminating care. I have already alluded to the frequency of natural emesis. It is therefore obvious that when this takes place from time to time it will be unnecessary to produce vomiting artificially. The indications for the use of emetics are constant dry cough with deficiency or dryness of the secretion, high fever, with full strong pulse, and deficient action of the skin. An emetic of apomorphia or sulphate of zinc, with or without ipecacuanha, or of ipecacuanha alone, seldom fails to give relief to the symptoms, by promoting the secretion of both bronchial mucous membrane and skin. Care should be taken in the administration of this class of remedies in debilitated children, as they are sometimes apt to produce great depression. It may be said generally that emetics are more suitable in the earlier than the later stages of the disease, in sthenic than in asthenic cases, and that in cases complicated by catarrhal pneumonia their employment is often of doubtful value.

In regard to the use of expectorant remedies, judicious selection is necessary according to the exigencies of the case. All empirical and routine treatment should be avoided. Choice must be made with due regard not only to extent of the disease and the exact pathological conditions, but with reference to the constitutional peculiarity of the child, and the state of the circulation and the bronchial secretions. In a strong child, during

the earlier stages of severe bronchial catarrh great relief is obtained from the use of the sedative circulatory expectorants, such as antimony, apomorphia, or ipecacuanha, with or without alkalies. The effect of these remedies is often most beneficial, but their action must be closely watched, and their administration stopped towards the height of the disease, or when any symptoms of depression of the circulation, or otherwise, become manifest. Children do not bear the administration of this class of remedies as well as adults, or, at all events, do not stand a long continuance of their administration so well. After the height of the disease, or in cases where there is a tendency to debility or feebleness of circulation, ammonia in the form of aromatic spirits or subcarbonate, or small doses of the hydrochlorate combined with senegæ, or with minute doses of that most valuable of all stimulants of the respiratory centre and nerve respiratory apparatus, strychnia, will be found of great service. Perhaps the most useful of all the expectorants in children are the saline, the alkaline carbonates, or the citrate of potash, combined with minute doses of the sodium or ammonium iodide. The effect of these drugs in promoting expectoration by increasing the fluidity of the secretions is of great service. They may be given early in the disease and continued to its height, thereafter being combined with senega or tinct. of nux vomica. There is another class of remedies which I cannot conclude without alluding to,—I refer to the terebinthinate ones, such as eucalyptus, turpentine, terebene, and such like. As a class they are more useful in the more chronic forms of the disease, with the exception of terebene and eucalyptus,—the latter used as an inhalation, the former internally. They seem to be antiseptic and antispasmodic; especially do I consider the latter action to be associated with terebene. It seems specially useful in cases where there is deficient secretion associated with bronchial muscular spasm. Two or three drops given along with the child's food often gives great relief to the cough, and otherwise allays irritation.

In acute catarrhal pneumonia the use of emetics requires great caution, and is often contraindicated by the feeble condition of the child. If I am asked what are the special lines of treatment in this complication, in addition to those laid down for ordinary severe bronchitis, I should say the main indications are,—to support the patient's strength by suitable diet, and stimulants if need be, and they are generally required, so as to give the child stamina to cope with this disease, the duration of which is usually indefinite and a sore tax on the vital power. Avoid the use of continuous moist poultices as a rule, preferring intermittent rubefaction or blisters of small size. As to drugs, antipyretics are often needed. The class of ordinary expectorants is usually contraindicated, except those of a stimulating nature. Most reliance must be placed on tonic doses of quinine or nux vomica, after the first week or ten days.

The limits of this paper forbid my going more fully into the medicinal treatment of the bronchial catarrh in children, but I trust I may have said enough to show that the administration and choice of drugs in treating these ailments in early life requires even more care and discrimination than in the same diseases at later periods.

VII. — REPORT OF CASES ADMITTED TO WARDS X., XI., AND XII., ROYAL INFIRMARY, EDINBURGH, UNDER THE CARE OF MR BELL, FOR SIX MONTHS ENDING 30TH APRIL 1886.

Reported by ROBERT STIRLING, M.B., C.M., House-Surgeon.

THE number of cases admitted, exclusive of those under treatment on 1st November 1885, was as follows:—

To Ward No. X.,	116 males.
XI.,	90 females.
XII.,	72 males.
Total,	278

Classification of Cases.

<i>Injuries.</i>	No.	Recovered.	Died.
Fractured Limbs (simple)	29	28	1
" (compound)	9	9	0
Fractured Ribs	5	4	1
" Spine	2	1	1
" Skull	3	2	1
" Pelvis	1	1	0
Dislocations of Shoulder	2	2	0
Compound Dislocation of Knee	1	1	0
Wounds { Lacerated	15	18	0
{ Punctured	1		
{ Penetrating	2		
Wounds necessitating Primary Operations	8	8	0
Bruises and Sprains	9	9	0
Cut Throat	4	2	2
Cerebral Concussion	3	3	0
Burns	7	5	2
	101	93	8

Surgical Diseases, etc.

	No.	Cured or Relieved.	Died.
Diseases of Joints	17	17	0
Caries and Necrosis of Bone	17	17	0
Tumours, Innocent	10	10	0
" Malignant	20	19	1
Hæmorrhoids	5	5	0
Carry forward,	69	68	1

	Brought forward,	No.	Cured or Relieved.	Died.
Fistula in Ano		69	68	1
Ulcers (Various)		3	3	0
Abcesses (Various)		15	15	0
Lupus and Rodent Ulcer		16	16	0
Gangrene of Extremities		2	2	0
Stricture and Cystitis		4	1	3
Cystic and Prostatic Calculi		13	13	0
Prostatic Inflammations		2	1	1
Tubercle of Prostate		6	6	0
Strumous Testicle		1	0	1
Periostitis		1	1	0
Perityphlitis		8	7	1
Bursitis		1	1	0
Phlebitis		5	5	0
Hernia		1	1	0
„ Strangulated		4	4	0
Stricture of Œsophagus		4	1	3
Talipes		1	1	0
Harelip		1	1	0
Hydrocele		4	4	0
Miscellaneous		2	2	0
		14	14	0
		177	167	10

There were 18 deaths, being a mortality of about 6·4 per cent. This percentage, however, would be at once reduced by one-half were those cases excluded that died within a few hours of admission. A fatal case of fracture of the trochanter major and neck of femur occurred in a worn-out old man, who succumbed to hypostatic pneumonia and cystitis. In the case of fractured ribs that ended fatally death was caused by septicæmia. The patient was run over by a heavy dust-cart, and was admitted in an extreme state of collapse, 4 or 5 ribs broken, and considerable emphysema. With reaction hæmoptysis set in, and examination showed extensive injury to the right lung. Pleuro-pneumonia followed, and strength gradually failed. The fatal case of fracture of the spine was instructive. The young man was knocked down by a bale of compressed hay, weighing 2 cwt., which fell on him from a height of 10 feet, striking him on the neck while he was engaged unloading cargo. He was at once conveyed from Leith to the Infirmary, where his condition was found to be as follows:—Complete paralysis and anæsthesia from the middle of the back downwards; great pain was complained of between the scapulæ, and not even the slightest movement of the head could be borne. No fracture could be felt. From subnormal the temperature soon rose to 108°·4; breathing became entirely costal and very laboured, and the patient died cyanotic in about 21 hours after admission. At the autopsy it was discovered that there was great extravasation of blood into the muscles of the back, and also into the spinal canal; that the third cervical vertebra was separated from the disc below, as was also the fifth, and that the articular and transverse

processes of the third, fourth, and fifth vertebræ were fractured on the right side.

The fatal case of fracture of the base of the skull occurred in a stout middle-aged man. He was admitted in an unconscious state, pupils insensible to light, breathing stertorous. He never rallied, and died in a convulsion. At the autopsy, fracture of the clinoid processes and extensive ventricular hæmorrhage were found. The fatal cases of "cut throat" were quite hopeless from the first, owing to the extent of the injuries and the depressed vitality of the patients. Two deaths resulted from burns. The first case was that of a woman, who, while intoxicated, set fire to her clothing, and sustained very severe and extensive injuries on the back especially, which was burned over its entire surface. The burns were of the third, fourth, and even fifth degree. The second case was that of a boy, whose head, face, chest, and arms were severely burnt by a gas explosion.

Operations.

Amputations and Excisions of Joints	26
Other Operations	71
	97

Minor operations in the out-patient department would raise the total to considerably over 200.

Amputations of Limbs.

	No.	Recovered.	Died.
In Thigh (1 primary)	3	3	0
In Leg (2 primary)	5	5	0
At Ankle	5	5	0
Above Elbow	1	1	0
At Wrist	1	1	0
	15	15	0

Excisions of Joints.

	No.	Recovered.	Died.
Knee (1 primary)	2	2	0
Elbow	1	1	0
Partial Amputations of Foot and Hand	3	3	0
	8	8	0
	11	11	0

The primary excision of the knee was a most interesting case. The patient, a middle-aged man, was knocked down and run over by a light truck, and in addition to injuries of head and back, sustained a compound fracture into the knee-joint. Mr Bell found the vessels and nerves to be uninjured, and decided to excise the joint, employing the ordinary elliptical incision. The original wound was stitched, and the limb put up in a plaster of

Paris splint. The patient made an uninterrupted recovery; the soft parts were completely healed within a month; from first to last not more than four or five dressings were required. It may be interesting to note in this connexion a case of compound dislocation of the knee-joint, occurring in a boy of 8 years old. His leg was caught in a cab wheel, and so torn that the head of the tibia projected backwards through the popliteal space, and the leg could have been extended on the anterior surface of the thigh. Portions of the ruptured hamstring muscles were cut away, all the parts thoroughly antisepticated, and the bones placed in position. Dressings were renewed for a time every second day, and recovery with a stiff-joint followed.

Other Operations.

Strangulated Hernia, 4; 1 recovered, 3 died. All were inguinal. Two of the cases have been already published. Of the remaining two, in the one, obstruction had existed 17 days prior to admission, and stercoraceous vomiting for 36 hours. The bowels moved shortly after operation, but the patient sank in 20 hours; in the other, a child of 3½ years, repeated and violent efforts had been made at intervals during 3 or 4 days to reduce the hernia. In the sac were found several inches of small intestine, a portion of the large intestine with the vermiform appendix. The child died in a convulsion five hours after operation.

Removal of Tumours.

	No.	Recovered.	Died.
Excision of Breast and Axillary Glands for			
Malignant Tumour	10	10	0
Other Malignant Tumours	6	6	0
Simple Tumours	8	8	0
Hæmorrhoids	3	3	0
Castration	1	1	0
Tenotomy	1	1	0
Hare-lip	4	4	0
For Necrosis and Caries of Bone	17	17	0
Minor Operations, Abscesses, Circumcision,			
Injection of Hydrocele, etc.	17	17	0
	71	71	0

Three cases of senile gangrene of the lower extremity ended fatally, in one of which both legs were affected. The patient survived for a time the natural separation of one foot, but sank after the line of separation on the other leg had distinctly formed. The vitality of youth was well shown in the case of a boy who fell three storeys, breaking his thigh, right arm, three ribs, clavicle (compound), besides sustaining injuries of head and spine. Notwithstanding the extent of injury, the boy made a good recovery.

Summary of cases seen at out-patient clinics, prepared by Mr F. D. Boyd, out-patient clerk:—

	Cases.		Cases.
Abscesses, ...	100	Hernia, ...	31
Ulcers, ...	69	Tumours, Malignant, ...	17
Wounds, ...	64	" Simple, ...	22
Poisoned Wounds, ...	13	Necrosis and Caries, ...	12
Enlarged Glands, ...	49	Phymosis, ...	2
Bursitis, ...	31	Paraphymosis, ...	3
Sciatica, ...	7	Varix, ...	22
Fractures and Dislocations, ...	47	Congenital Malformations, ...	28
Sprains and Bruises, ...	95	Flat-Foot, ...	13
Diseases of Joints, ...	66	Spinal Curvature, ...	9
Periostitis and Ostitis, ...	41	Eye and Ear Affections, ...	8
Ganglion, ...	7	In-growing Toe Nail, ...	9
Whitlow, ...	21	Burns, ...	12
Syphilitic Diseases, ...	38	Calculus, ...	3
Stricture, ...	16	Fistula in Ano, ...	4
Skin Affections, ...	26	Polypi, ...	8
Foreign Bodies, ...	9	Nævus, ...	5
Rupture of Vas Deferens, ...	1	Ozæna, ...	1
Pharyngeal Affections, ...	21	Hydrocephalus, ...	4
Orchitis and Epididymitis, ...	6	Neuralgia, ...	5
Cystitis, ...	1	Gangrene, ...	1
Piles, ...	10	Seminal Emissions, ...	2
Hydrocele, ...	15		
Hæmatocele, ...	1	Total, ...	975

VIII.—CLINICAL AND PATHOLOGICAL MEMORANDA.

By BYROM BRAMWELL, M.D., F.R.C.P. (Edin.), Assistant Physician to the Edinburgh Royal Infirmary; Lecturer on the Principles and Practice of Medicine, and on Practical Medicine and Medical Diagnosis in the Extra-Academical School of Medicine, Edinburgh; Additional Examiner in Clinical Medicine in the University of Edinburgh, etc.

IX.—*A Remarkable Case of Disseminated Softening of the Brain with the Formation of Numerous Small Cysts.*

THE patient, from whom the brain which I am about to describe was removed, was a man, apparently about 50 years of age, who died from chronic phthisis. He was semi-comatose when he came under observation, and had no friends; the history of his previous illness was unfortunately not obtained, and I am therefore unable to give any description of the symptoms which such a wide-spread cerebral lesion must undoubtedly have produced. The pathological features of the lesion are, however, so remarkable that I have not scrupled to devote a large amount of time and labour to working up the microscopical preparations and drawings of the case. The description is as follows:—

The scalp, skull cap, and dura mater were normal. The arachnoid was markedly thickened and opaque. The veins on the surface of the hemispheres were considerably dilated, and their

walls seemed thicker than normal. The great arteries at the base of the brain were slightly atheromatous; in order that the brain might be injected whole, they were not cut up; the Müller's fluid which was used for this purpose flowed freely into all the vessels; neither in the recent state nor on subsequent microscopical examination was any evidence of embolism or thrombosis found. The great veins within the skull were apparently healthy; no localized cause of obstruction to the venous return from the brain, other than the condition of the lungs and heart, was seen. Both lungs were in an advanced state of chronic disease (phthisis), the right heart was considerably dilated, the feet and legs were moderately œdematous, the liver and kidneys were engorged, but not by any means in an advanced degree.

Numerous loosely distended cysts projected from the surface of the left hemisphere of the brain, more especially in the frontal and in the anterior parts of the parietal and temporo-sphenoidal regions. In size, the cysts ranged from a large pin's head to a cherry, though one (that to which the letter *c* in Fig. 28 points) was fully the size of a walnut. I must here remark that this drawing (Fig. 28), which was copied from a photograph of the brain after it had been hardened with Müller's fluid, gives a very imperfect idea of the recent appearances, for the cysts have collapsed, their watery contents having exuded, and appear as depressions instead of as projections on the surface of the brain. The cysts contained a slightly turbid but colourless fluid of watery consistence.

Over the posterior parts of the left hemisphere, and here and there on the surface of the right, a few small cysts were also seen.

The convolutions, more especially those of the left frontal, parietal, and temporo-sphenoidal lobes, were in places remarkably atrophied and depressed.

As has been already mentioned, the brain was hardened as a whole by injecting it with Müller's fluid (Professor D. J. Hamilton's method). At the end of six weeks the exterior of the brain was first photographed; it was then cut into a series of transverse vertical sections, which were also photographed; by this means a permanent and strictly faithful representation of the appearances was obtained.

On examining these sections it was seen that the cysts on the surface of the brain corresponded to excavations in the cerebral cortex, while the depressions in the convolutions, which have been described as being present in the fresh state, corresponded to shrunken, atrophied, and softened areas in the subjacent brain tissue. These degenerated areas, like the cysts, were for the most part situated immediately beneath the cortex, but in places they extended deep into the white matter of the centrum ovale (see the parts to which the letters *b* and *c* in Fig. 29 point). In one section (that made half an inch behind the section represented in

Fig. 29), both softened areas and holes, *i.e.* cysts (which varied in size from a small pea to a small bean), were situated in the white matter of the centrum ovale, the head of the corpus striatum, the anterior division of the internal capsule, the lenticular nucleus (a small portion of the anterior end of which came into view in this

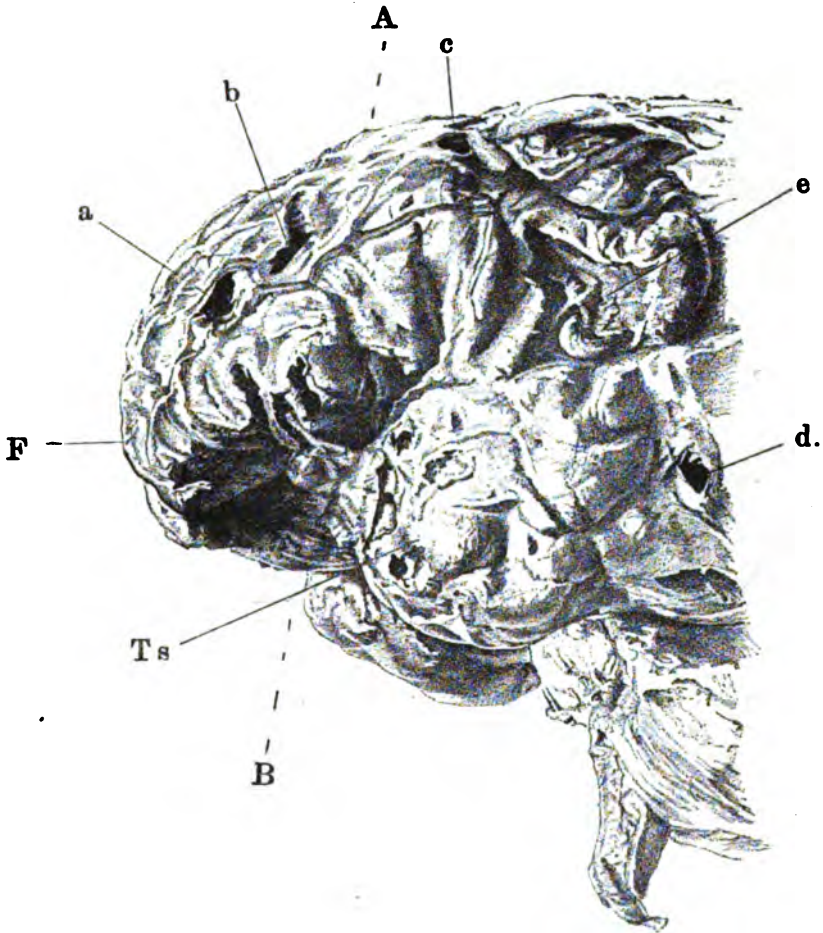


FIG. 28.—A Portion of the Left Hemisphere of the Brain (Case IX.), showing numerous Cystic Cavities and Depressions on the Surface (reduced from a Photograph).

The photograph was taken from the brain after it had been hardened by injections of Müller's fluid. In the recent state, the cysts projected from the surface instead of being depressed below it. F, frontal, and Ts, temporo-sphenoidal lobes; a, b, c, d, small depressions representing collapsed cysts; e, a large collapsed cyst.

section), and in the corpus callosum. There were also several small patches of softening in the cerebellum and in the gray matter of the pons Varolii surrounding the aqueduct of Sylvius. The lower part of the pons Varolii and the medulla oblongata

were, both to the naked eye and the microscope, free from disease. The spinal cord was not obtained.

There were no cysts in any other organ except the brain.

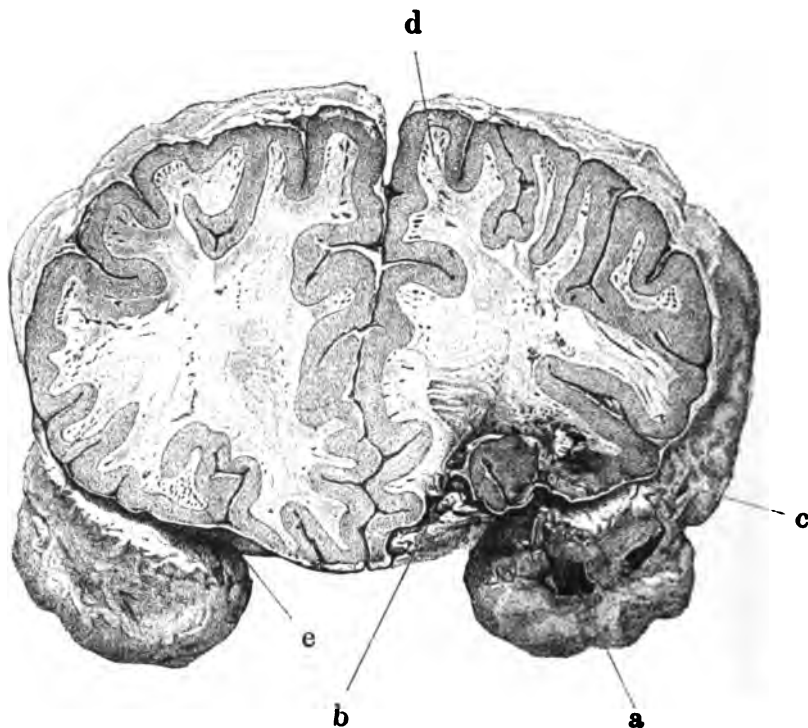


FIG. 29.—*Transverse Vertical Section through the Frontal Region of the Brain (Case IX.) The Section is made immediately in front of the Temporo-sphenoidal Lobe, in the direction of the dotted line A B in Fig. 28 (reduced from a Photograph).*

a, Collapsed cyst in the tip of the left temporo-sphenoidal lobe; *b* and *c* point to degenerated and softened portions of the brain, over which the convolutions were atrophied and depressed on the under surface of the left frontal lobe; the superficial depressions are well seen in Fig. 28, on the under surface of the tip of the left frontal lobe. *d* and *e* point to portions of the brain, in which the "état criblé" is well marked. The greater part of the cortex and some portions of the centrum ovale are seen to be affected with this condition.

In addition to these large patches of lesion, numerous small holes, the largest of which were about the size of a pin's head, were seen both in the white matter of the convolutions and of the centrum ovale. The interior of some of the convolutions was riddled with these minute holes (see the parts in Fig. 29 to which the letters *e* and *d* point). In the interior of these minute holes the transverse sections of minute vessels were distinctly visible to the naked eye. To this condition, in which portions of the brain are riddled with minute holes containing bloodvessels, the term "*état criblé*" has been applied. Here and there the minute holes had been longitudinally divided, and the central bloodvessel was seen in longitudinal section surrounded with a long narrow canal.

On microscopical examination, it was evident that the cysts represented the remains of old softened areas in the cerebral tissue.

Almost all the superficial cysts, which were examined microscopically, were bounded on the surface by a minute band of brain tissue, which exactly corresponded in thickness to the first or superficial layer of the cerebral cortex—a beautiful pathological demonstration of the fact that the narrow superficial rim which covers the convolutions is a connective tissue and non-nervous structure. Although the pia mater and arachnoid were considerably thickened they were not adherent and fused with the cyst surface (these points are clearly seen in Fig. 30). The sides and floor of the

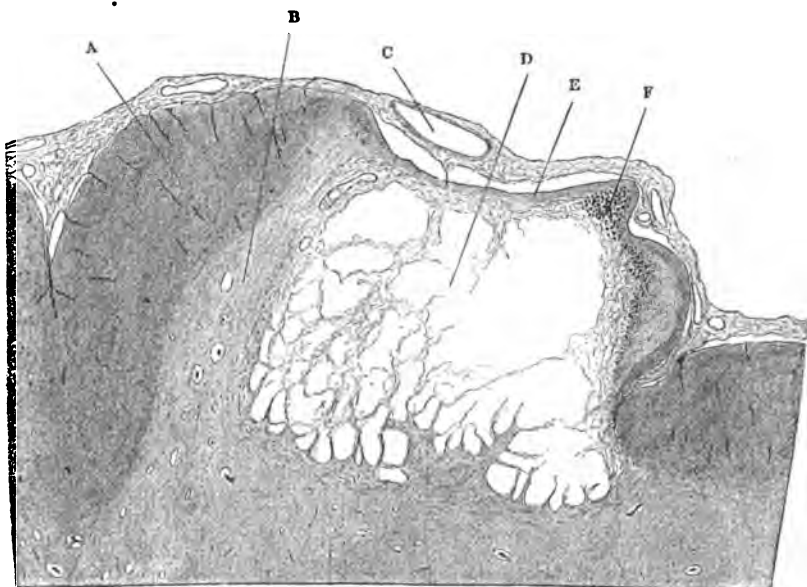


FIG. 30.—*Camera Lucida Drawing of a Section through a Superficial Cyst on the Surface of the Brain. (Case IX.) Stained with Borax Carmine, cleared with absolute Alcohol and Oil of Cloves, and mounted in Zylol Balsam (Magnified—Hartnack, ocular 2, objective 1, and Drawing reduced from $8\frac{1}{2}$ to $4\frac{1}{2}$ inches).*

A, Gray matter of the convolution; B, white matter, in which several small cavities constituting the "état criblé" are seen; C, large vein in the membranes, which are unadherent over the cyst; D; E, narrow rim of brain tissue, exactly corresponding to the superficial or first layer of the cortex; F, masses of hæmatoidin granules. The cyst cavity is traversed by delicate connective tissue trabeculae, some of which have been broken down and destroyed in the preparation of the microscopical specimen.

superficial cysts were formed by a sclerosed ring of brain tissue, in which innumerable corpuscles of hæmatoidin granules were seen. The cyst cavity was traversed by a delicate network of connective tissue and bloodvessels, the intervening spaces being filled with fluid. The cysts in the interior of the brain were of a like structure, as seen in Fig. 31, in which a small cyst which is situated at the junction of the gray with the white matter of the cortex, and which was not visible as a cyst from the surface, is shown.

The microscopical examination of those portions of the brain which were riddled with small holes, *i.e.* in the "*état criblé*," was even more interesting. Under a low power, the holes, with their central vessels, were seen to be for the most part, but by no means altogether, situated in the white matter of the convolutions; while the portions of the white matter, which had appeared normal to the naked eye, were found to be traversed by innumerable glistening lines, which are well represented in Fig. 32. Under higher

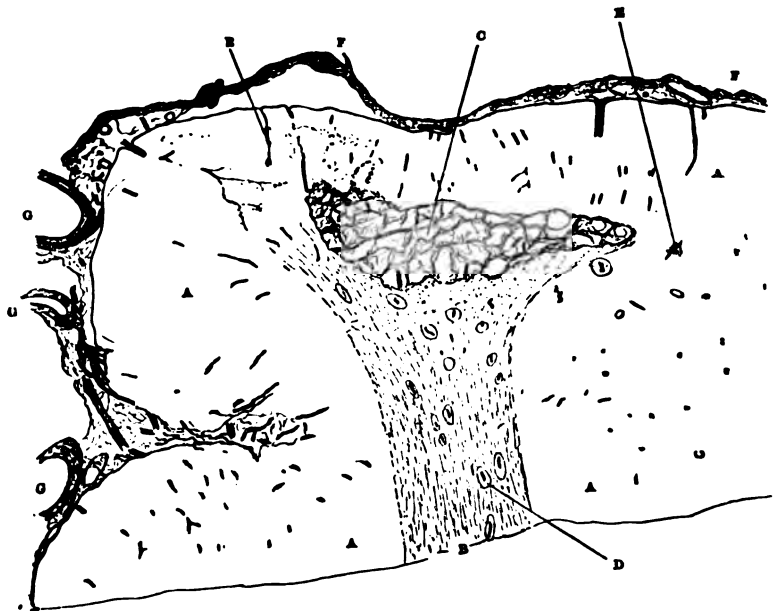


FIG. 31.—Camera Lucida Drawing of a Section through a Convolution of the Brain (Case I.X.), showing a Minute Cyst situated at the junction of the Gray with the White Matter of the Cortex, and the "*État Criblé*" in the White Matter. Stained with Picro-carmin and slightly with Perosmic Acid, cleared with absolute Alcohol and Oil of Cloves, and mounted in Zylol Balsam (Magnified—Hartnack, ocular 3, obj. 2, and drawing reduced from $10\frac{1}{2}$ to 4 inches).

The letters A, A, A, are placed on the gray matter of the convolution, the white matter, B, being shaded; C, the small cyst, traversed by connective tissue trabeculae and bloodvessels; D, one of the cavities, distinctly visible to the naked eye, forming the "*état criblé*;" E, E, point to minute vessels surrounded by granules of hæmatoidin, and which are represented as more highly magnified in Figs. 37 and 38; F, F, the membranes, which are somewhat thickened, but not adherent to the surface of the brain; G, G, portions of large veins situated in the membranes and cut somewhat obliquely, giving the impression in the Fig. of very thick walls. The vessels, both in the membranes and throughout the convolution, both in its gray and white matter, are much enlarged and dilated.

power the holes constituting the "*état criblé*" were found to be minute cystic and softened cavities surrounding bloodvessels. Their structure, which is accurately represented in Figs. 33, 34, 35, and 36, was as follows:—A small vessel, which was sometimes empty, but usually filled with red blood corpuscles, and which I am disposed to think was in all cases a vein, was situated in the centre of the hole; the central vessel was in all cases found to be surrounded by a dense concentric ring of extremely delicate

connective tissue fibrils. The wall of the cavity was invariably found to consist of a dense ring of highly refractive corpuscles, irregular in shape and size, but for the most part three, four, or five times the size of a red blood corpuscle; these bodies, though hardly if at all tinted with carmine and picro-carmine, were probably composed of colloid material; they were absolutely unstained with perosmic acid, and were, therefore, not fatty. The



FIG. 32.—Camera Lucida Drawing of a Microscopical Section through a Convolution of the Brain (Case IX.), showing the appearances presented by the "Élat Criblé" under a very Low Power. Stained with Carmine, cleared with absolute Alcohol and Oil of Cloves, and mounted in Zylol Balsam (Magnified—Hartnack, oc. 3, obj. 2, and Drawing reduced from $8\frac{1}{2}$ to $8\frac{1}{4}$ inches).

The cavities constituting the "élat criblé," which were very visible to the naked eye, are seen to contain bloodvessels, and to be, for the most part, situated in the white matter of the convolution.

Numbers of very minute glistening lines, which under a high power are seen to be minute (capillary) vessels surrounded with colloid bodies (see Fig. 39), are seen in the white matter between the cavities constituting the "élat criblé."

centre of the cavity was traversed by a delicate network of connective tissue fibres, containing spindle cells and connective tissue corpuscles; the connective tissue fibres, which traversed the cavity, were continuous, on the one hand, with the concentric layer of connective tissue surrounding the central vessel, and on the other with the brain tissue through the ring of colloid bodies described above. Granular masses of hæmatoidin were seen in

most of the cavities; in some there were dense masses of extravasated red blood corpuscles (see Fig. 36).

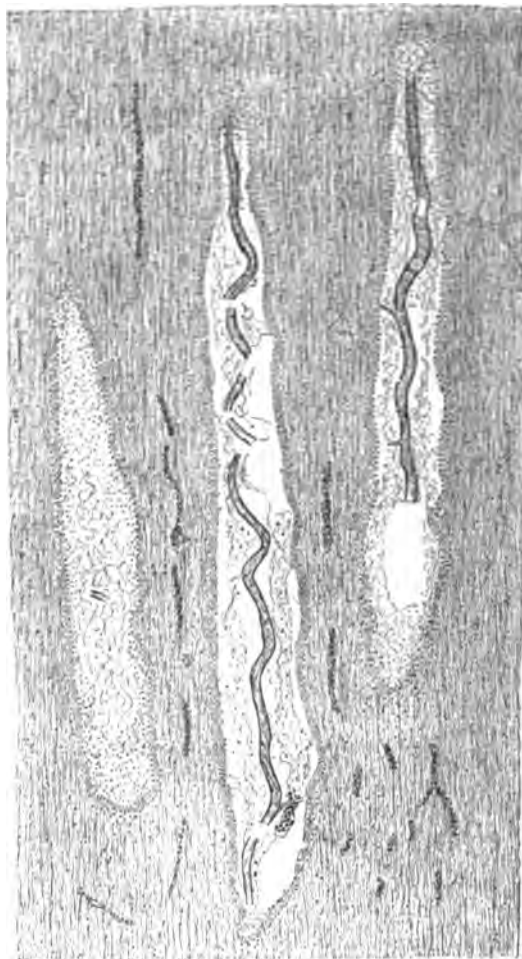


FIG. 33.—Camera Lucida Drawing of a Section through the White Matter of a Convolution of the Brain (Case IX.), showing Three of the Cavities constituting the Condition which has been termed the "Flat Criblé" in Longitudinal Section. Stained with Carmine, half-cleared with Methylated Spirit and Oil of Cloves, and mounted in Zylol Balsam (Magnified—Hartnack, oc. 3, obj. 3, and Drawing reduced from $10\frac{1}{2}$ to 5 inches).

Two of the cavities contain bloodvessels; that in the central cavity is so twisted on itself that it has been cut (at its bends) into several small portions. The central vessels of the cavities are surrounded by bands of delicate connective tissue, in the meshes of which there are numerous corpuscles, hematoidin granules, and colloid bodies. A dense layer of colloid bodies (seen under this magnifying power as small dots) surround the cavities. The smallest cavity (that on the left hand side of the Fig.) contains in its centre a minute portion of a bloodvessel, and is filled with a dense network of connective tissue fibres.

Many minute vessels were picked out of the longitudinally divided holes previously described, and after staining in picrocarmine were mounted in Farrant's solution. In several instances,

two vessels—an artery and a vein—were found in a single cavity. The walls of the artery were invariably healthy; the vein was in all instances surrounded with a dense layer of exceedingly delicate connective tissue fibrils, arranged longitudinally with the course of the vessel. Adhering to the outer surface of this connective tissue sheath large numbers of corpuscles of hæmatoidin granules

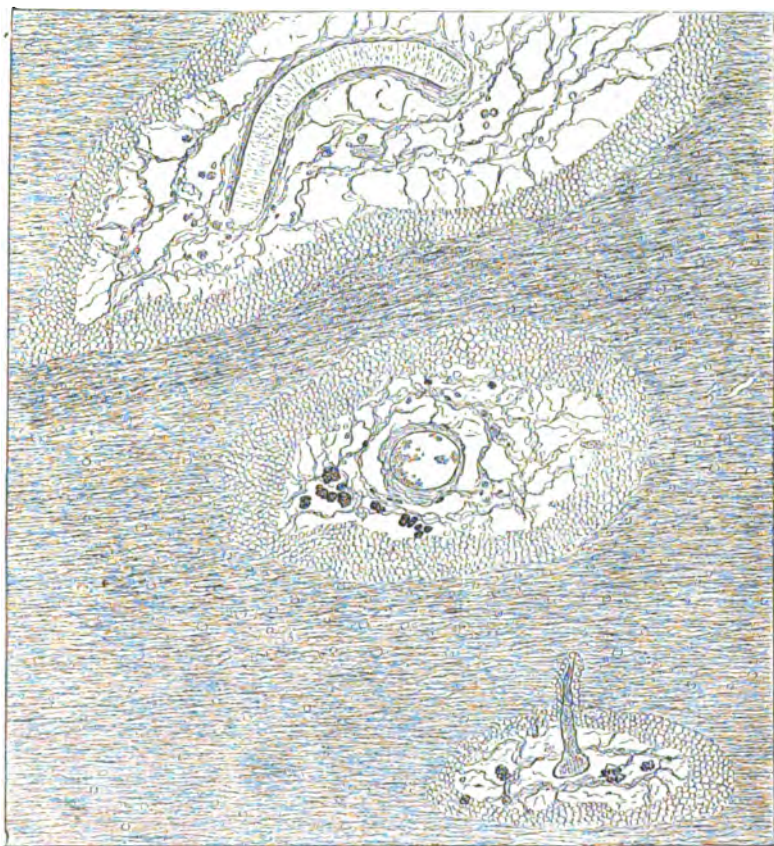


FIG. 31.—Camera Lucida Drawing of a Section through a Portion of the White Matter of a Convolution of the Brain (Case I.X.), showing Three Cavities of the "Erat Criblé." Stained with Picro-carmin and slightly with Perosmic Acid, and mounted in Farrant's Solution (Magnified—Hartnack, oc. 3, obj. 8, and Drawing reduced from 8 to 4 inches).

In the centre of each cavity a vessel (? vein), surrounded by connective tissue trabeculae, is situated. A dense layer of colloid bodies forms the walls of the cavities; several masses of hæmatoidin granules are seen in the two smaller cavities.

were almost invariably found; many of the vessels which were not surrounded by cavities also had corpuscles of hæmatoidin granules adhering to them (see Figs. 37 and 38). The minute glistening lines, which under a low power were seen in the white matter of the convolutions (see Fig. 32), were found when more highly magnified to be capillaries surrounded with colloid bodies

(see Fig. 39). Numerous colloid bodies were also scattered throughout the intervening tissue, *i.e.* between the capillaries of the white matter.

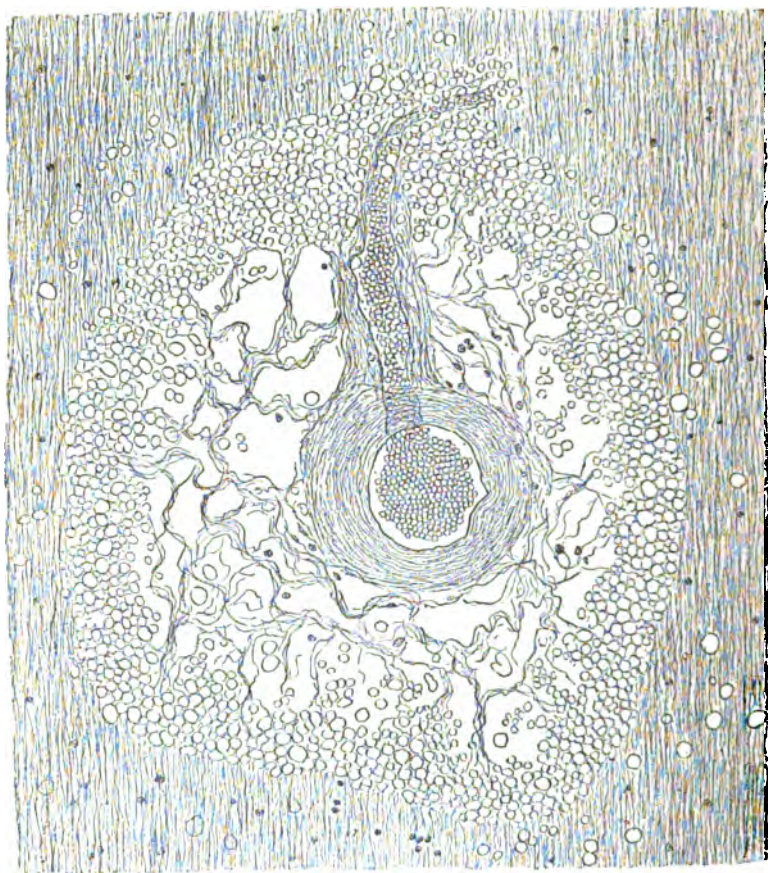


FIG. 35.—Camera Lucida Drawing of a Section through one of the Cavities constituting the "État Criblé" (Case IX.), highly magnified. Stained with Carmine, half-cleared with Methylated Spirit and Oil of Cloves, and mounted in Zylol Balsam (Magnified—Hartnack, oc. 3, obj. 8, and Drawing reduced from $5\frac{1}{2}$ to 4 inches).

In the centre of the cavity a transversely divided vessel (? vein) of some size is situated: it is filled with red blood corpuscles. A small branch, also filled with blood corpuscles, is seen passing from the brain tissue into the large central vessel; both vessels are surrounded with a thick, dense ring of extremely delicate connective tissue fibrils. Numerous connective tissue trabeculae extend from the central bloodvessel across the cavity, and make their way through the layer of colloid bodies which surrounds the cavity to become continuous with the connective tissue of the white matter. Connective tissue corpuscles, colloid bodies, and a few red blood corpuscles, are scattered throughout the cavity, and are seen adhering to the connective tissue trabeculae. A few colloid bodies are seen in the white matter of the brain surrounding the cavity; the small deeply stained bodies in the white matter are connective tissue corpuscles.

The nerve cells throughout the brain were either atrophied or fatty. The gray matter immediately surrounding the cysts and softened areas was sclerosed, its nerve cells having for the most part completely disappeared.

To sum up, the chief pathological appearances were:—(1), The presence of commencing softening and degeneration around the minute capillary vessels of the brain, more especially of the white matter of the convolutions; (2), the condition which is known as the "*état criblé*," the holes being in this case minute



FIG. 36.—Camera Lucida Drawing of a Section through one of the Cavities constituting the "*État Criblé*" (Case IX.), highly magnified. Stained with Picro-carmin and mounted in Farrant's Solution (Magnified—Hartnack, oc. 8, obj. 8, and Drawing reduced from $6\frac{1}{4}$ to $4\frac{1}{2}$ inches).

In the centre of the cavity an empty bloodvessel, seen in longitudinal section, is situated. It is surrounded by a dense layer of very delicate connective tissue fibrils. The cavity is lined by a thick layer of colloid bodies, and filled with a mass of red blood corpuscles.

cystic and softened cavities surrounding diseased vessels (? veins); and (3), the presence, both on the surface of the brain and in its interior, of numerous naked eye patches of softening, and of cysts which had evidently resulted from the process of softening.

The exact causation of the lesion was not ascertained, and must

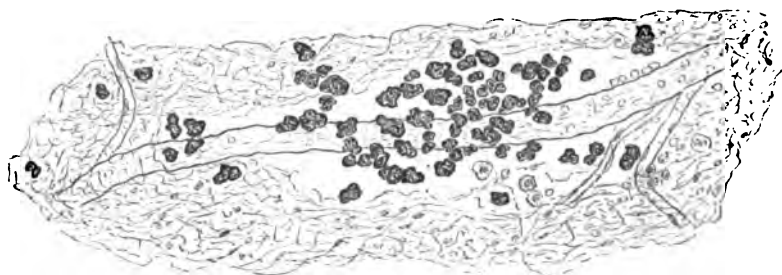


FIG. 37.—Camera Lucida Drawing of the Portion of the Section to which the letter E, on the right hand side of Fig. 31 points, showing a Small Vessel surrounded with Masses of Hamatoidin Pigment. Stained with Picro-carmin and slightly with Peroemic Acid, cleared with absolute Alcohol and Oil of Cloves, and mounted in Zylot Balsam (Magnified—Hartnack, oc. 3, obj. 8, and Drawing reduced from $6\frac{1}{2}$ to 4 inches).

be a matter of speculation. Arterial obstruction may, I think, be definitely excluded. Obstructed venous return, notwithstanding the fact that no definite localized cause of venous obstruction was found at the autopsy, must, I think, have played a prominent part in the production of the condition, but that this was the only cause of the lesion is, I think, exceedingly doubtful. The extremely diffused character of the lesion, and the presence of commencing degeneration of the nervous tissue around all the minute vessels, were suggestive to my mind of the escape into the tissues of some toxic substance. Examination of the degenerative areas by Gram's method of staining yielded negative results, as I had expected; if, then, any toxic substance was concerned in the production of the condition, it must have been of a chemical nature.

The case further shows that the "*état criblé*" may be a pathological condition of real importance, a fact which is opposed to the opinion of some authorities. Thus, in speaking of this condition, Drs G. H. Savage and Hale White say, "The chronic, or for that matter acute, congestion of the cerebral vessels which one often sees in death from obstructed right side of the heart, or from the body having lain with the head low, or as a result of opening the skull before the rest of the body, makes them very prominent, and if on cutting the brain the blood runs out of the distended vessels, or still more, if in microscopical sec-

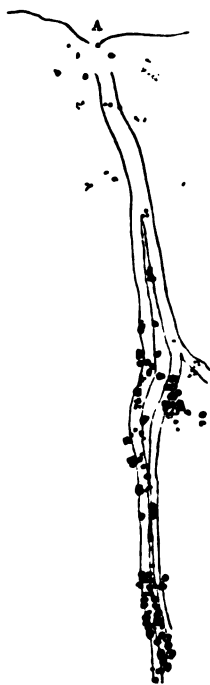


FIG. 38.—Camera Lucida Drawing of the Portion of the Section to which the letter E on the left hand side of Fig. 31 points, showing a Minute Vessel passing into the Gray Matter (Magnified—Hartnack, oc. 3, obj. 8, and Drawing reduced from $8\frac{1}{2}$ to $3\frac{1}{2}$ inches).

Numerous granular masses of hamatoidin are situated in the lymphatic space surrounding the vessel. The letter A is placed on the free surface of the convolution.

tions the whole vessel falls out, an appearance is produced as if the brain were riddled with pin holes. This Gresinger calls the "*état criblé*." It is most important to bear in mind that this is of no pathological importance, etc."¹ It would be more correct to say that the condition which has been termed the "*état criblé*" may be of no pathological importance; whether it is so or not can only be absolutely determined by means of the microscope.

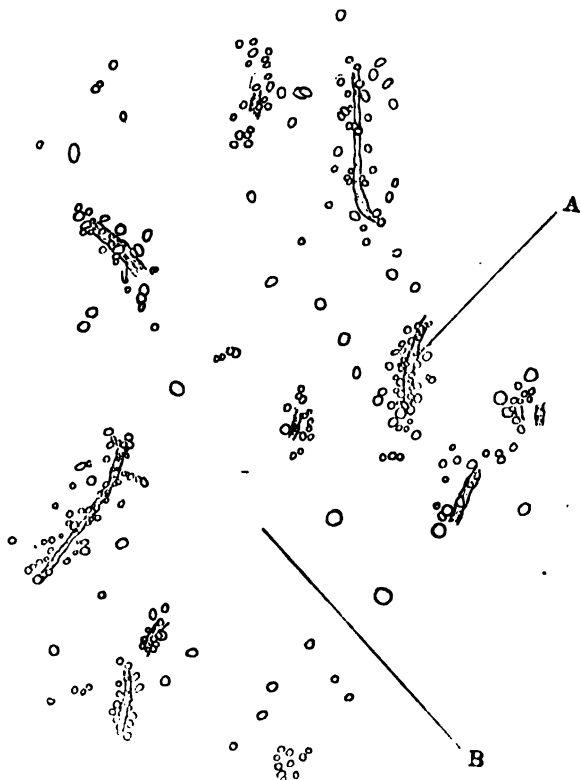


FIG. 39.—Camera Lucida Drawing of a Section through a Portion of the White Matter of a Convolution of the Brain (Case IX.), showing numerous small (Capillary) Vessels (A) surrounded with Colloid Bodies. Many Colloid Bodies are scattered through the White Matter (B) between the Vessels. The structure of the White Matter is not shown in the Drawing. Stained with Picrocarmine and Osmic Acid, half-cleared with Methylated Spirit and Oil of Cloves, and mounted in Zylol Balsam (Magnified—Hartnack, oc. 3, obj. 8, and Drawing reduced from 6 to 4 inches).

X.—A Case of Holes in the Brain.

In conjunction with the "*état criblé*" to which reference has just been made, I may perhaps refer to another case in which I found portions of the brain riddled with holes.

The patient (A. B.), a man, æt. 23, died in the Newcastle-on-Tyne Infirmary from acute tuberculosis affecting the lungs,

¹ Transactions of the Pathological Society of London, vol. xxxiv., page 3.

intestines and peritoneum, and kidneys. The membranes of the brain were healthy, and, so far as could be ascertained, there had been no definite and localized symptoms of brain disease. The patient had, however, been of a stupid and apathetic disposition.



FIG. 40.—*Camera Lucida Drawing of a Section through a Convolution of the Brain in the case of A. B., showing the Brain Tissue, both Gray and White Matter, riddled with holes.*

Considerable shrinking of the brain tissue has been produced by the methylated spirit in which the preparation was hardened and preserved, but the section gives a very fair idea of the appearance which this portion of brain presented in the recent state. Stained with Carmine, cleared with absolute Alcohol and Oil of Cloves, and mounted in Canada Balsam (Magnified—Hartnack, oc. 3, obj. 2, and Drawing reduced from $8\frac{1}{2}$ to $3\frac{1}{4}$ inches).

A, Apex of the convolution: B, B, gray matter; C, C, white matter. An artificial white line has been placed in the drawing to show the separation of the gray from the white matter.

On cutting across the brain, portions of the cortex, more especially in both occipital lobes, were seen to be literally riddled with holes, which varied in size from a pin's head to a small pea. The holes were situated both in the gray and in the white matter; they seemed, so far as could be judged from their position and direction, to follow the course of the vessels, and in the interior of

some of these vessels were distinctly seen. The holes were, however, for the most part empty. During life they had probably been filled with a clear colourless liquid resembling subarachnoid fluid. Some holes were also present in the white matter of the centrum ovale bordering the affected convolutions, but the holes in the central portions of the brain were small, and comparatively few and far between. There were no holes in the central ganglia, nor in the pons and medulla.

Portions of the convolutions, which were most affected by the lesion, were first hardened and then stored in methylated spirit, but were not submitted to microscopical examination until two years had elapsed. A section of one of these convolutions is represented in Fig. 40, under a low magnifying power. Considerable shrinking of the brain tissue has undoubtedly been produced by the action of the spirit, and the size of the holes is consequently exaggerated, but the section, notwithstanding, conveys a fairly accurate representation of the appearance which portions of the brain actually presented in the perfectly fresh state. Under high magnifying powers, almost all trace of the proper nervous elements has disappeared,—the tissue being formed of a sclerosed neuroglia, in the midst of which numerous connective tissue corpuscles are very apparent. The margins of the holes were for the most part clean cut, and formed of condensed neuroglial tissue; there was no proper lining membrane; a few of the holes contained blood-vessels, which were engorged with red blood corpuscles; here and there granules of hæmatoidin were seen in the gray matter.

The exact nature and causation of the holes which were found in the brain in this case are doubtful. The lesion seems in some respects to correspond to the "Gruyère cheese" condition rather than to the "*état criblé*."

By the "Gruyère cheese" condition is understood that state of the brain which is produced by a dilatation of the perivascular spaces around the arteries. "The holes are exactly like those found in Gruyère cheese, being rounded, smooth, and having a peculiar shining look in their interior; they are, as far as we have observed, quite empty." (In a footnote the authors state that "since the above was in type, we have met with an example of Gruyère cheese brain in which there was some reddish debris in one of the cavities. This brain had only been in spirit a few days.) As regards size, the largest are about the size of one of the medium sized holes in a Gruyère cheese, and some of them have an elongated shape, which suggests that they follow the course of vessels."¹ The authors (Drs Savage and Hale White) then show that this condition of brain is not due to post-mortem causes, such as hardening in spirit; they believe that the proximal cause of these cavities is a saccular dilatation of the lymphatic space of His, which surrounds the vessels; but as to the ultimate cause, *i.e.*

¹ *Transactions of the Pathological Society of London*, vol. xxxiv., page 4.

the cause of this saccular dilatation of the perivascular lymphatic space, they are unable to advance any explanation.

In the same paper reference is made to the rare lesion in which there is a simple, cystic, degeneration of the brain, kidneys, liver, and it may be of other organs, and to the other conditions which may give rise to holes in the brain.

Part Second.

REVIEWS.

The Influence of the Sympathetic on Disease. By EDWARD LONG FOX, M.D. Oxon., F.R.C.P. London: Smith, Elder, & Co: 1885.

THIS is an octavo volume of 560 pages. Its perusal leaves behind a satisfied feeling that the reader has been put in possession of all that is yet known about a somewhat obscure subject. The information is perhaps somewhat too full. It would be difficult to object to Dr Long Fox that he has left anything unsaid about the sympathetic system or its influences. The tendency in medical teaching and writing now-a-days seems to be favourable to the accumulation of details. The first chapter opens with the remark, that "it seems at least doubtful whether the anatomy of the whole sympathetic system of nerves is thoroughly known." At any rate, enough is known to fill 35 pages on the anatomy of the sympathetic. Then we have 94 pages upon its physiology, mixed with pathological deductions and illustrations. When the author comes to pathology, the task becomes difficult to separate the diseases of the sympathetic from what might or what ought to be called the diseases of the cerebro-spinal system, or those of the arteries, or those of special organs, or the disorders of the body generally. Do the minute twigs of the sympathetic nerves follow the arteries to the brain and spinal cord, and exercise in these organs the functions of dilating and constricting the vessels which have formed the base of so much crude speculation in pathology? We have *vasa vasorum* and *nervi nervorum*, and *vasa nervorum* and *nervi vasorum*, which act and react upon one another. Whither shall we go back for the starting-point of nerve power and its loss, constituting disease? To the nerve cell or granule, or to the fluid which nourishes them, or to the vessels which conduct the blood, or to the minute nerves which regulate the calibre of the vessels? No doubt Dr Fox has had to consider what to write upon and what to avoid writing upon. Naturally he is anxious to give the sympathetic fair play; and if he some-

times appears to wander beyond the bounds of his subject, his digressions are generally original and instructive. We have chapters on exophthalmic goitre and on myxœdema, though the author leaves us under the impression that these diseases have little to do with lesions of the sympathetic. We cannot subscribe to the idea that sunstroke is due to any special affection of the sympathetic, or that it is primarily deranged in general paralysis. The probable influence of the sympathetic in neurasthenia, angina pectoris, hepatic neuralgia, and visceral neuroses, affords material for interesting disquisitions on these diseases. Wherever the blood supply of the nervous centres is at fault, one can assume, or guess, that the sympathetic is concerned. Thus the author can be justified in having chapters on headache, insomnia, and epilepsy, all of which may be read with instruction. In hemicrania and insomnia he recommends treatment which should act upon the vaso-motor centres.

After an exhaustive discussion of the pathology of diabetes mellitus, Dr Long Fox arrives at the conclusion that this disease is brought about by inhibition of the vaso-motor centre of the liver, which may be brought about by irritation of the vagus. "The connexion is almost invariably reflex, and the vaso-motor system generally affords the centre of the reflex arc and the exodoc nerve."

"It is on this view," observes Dr Fox, "that electricity may be employed as a curative agent. It is recommended that electrostatic currents of sparks and shocks should be passed through the liver and other parts of the body. Favourable results were obtained by Dr Clemens of Frankfort-on-Main by employing induced currents in the direction from the back of the neck to the liver. This can only have been by modification of the calibre of the hepatic arteries." Our own experiments with the continuous and interrupted currents have much sobered our hopes of permanently modifying the calibre of the vessels in any organ. As for static electricity, we should recommend young practitioners to wait till Dr Fox has himself tried it in diabetes.

The chapters on the influence of the sympathetic on diseases of the eye, in myosis, mydriasis, and glaucoma, as well as those on ephidrosis, symmetrical gangrene of the extremities, and pigmentation, are full of curious and recondite information. On the whole this careful and laborious work must add greatly to the author's well-deserved reputation. Not only is it full of instruction, but it opens a wide field for speculation, which may yet be fertile in results. Nothing has been left undone to ensure completeness. The style is clear, the print good, and the book is illustrated with a number of carefully-executed lithographs and woodcuts.

Von Ziemssen's Handbook of General Therapeutics. Vol. V. General Orthopædics, Gymnastics, and Massage, by Professor Dr FRIEDRICH BUSCH; Translation edited by NOBLE SMITH, F.R.C.S.E. Hydrotherapeutics, by Dr W. WINTERNITZ; Translated by F. W. ELSNER. London: Smith, Elder, & Co.: 1886.

THE first part of this volume opens with an elaborate account of gymnastics and athletics as they were practised amongst the ancient Greeks, and following this is a shorter account of the state of these in mediæval and modern times. Under the section on Orthopædics, the various deformities to which the limbs, neck, and trunk are liable are considered, and the treatment, either ameliorative or remedial, applicable to each. Much the greater part of this section is taken up with a consideration of skoliosis; and the treatment of it by gymnastics and by mechanical appliances is very fully examined, and illustrated by woodcuts. This part ends with a section on the application of gymnastics and massage in medicine for cases other than orthopædic. The treatment of joint injuries, especially sprains, by this method is interesting, in so far as it shows that surgeons have admitted within the realm of orthodoxy a method of treatment which, we have good reason to know, was long successfully used by various old women throughout the country, much to their own glorification and the discredit of orthodox practitioners, who believed in lotions and rest. The section is, however, incomplete, for there is no mention of the use of massage in cases of neurasthenia, and this cannot be regarded but as a grave omission in a work of this kind, which ought to be practically exhaustive.

The second and greater part of the volume is devoted to hydrotherapeutics. The immensity of the literature on this subject may be estimated when we say that the references alone occupy thirty-two pages. We do not wish to appear too critical, but on the first page of the historical part, the translator speaks of the "Vedas of Sanscrit" instead of the Sanscrit Vedas. It would be as correct to speak of the hymns of English instead of English hymns. The history of hydrotherapeutics is fully gone into from the earliest times, as may be gathered from the reference to the Vedas, down to the time of Priessnitz, and from that on to the present. There can be little doubt that the advocacy and use of hydrotherapeutics, coming from a layman ignorant of the medical knowledge of his time, did much to lead to the boycotting of the system and all pertaining to it, by the profession. That this feeling should in time have been largely overcome is not more than might have been expected, but, so far as we are aware, there is no work where the same effort is made as is made in the work before us to place hydrotherapeutics on an approximately scientific basis, and we have no doubt that its appearance in this country will do much for

hydrotherapy, and will show the profession that there is in this a valuable auxiliary to the ordinary treatment of many diseases. The various appliances and the method of their application are fully described, and the diseases in which they have been severally found useful are indicated. The tendency in this country in the establishments called hydropathic has been to make them places for pleasant relaxation and rest rather than places for the treatment of disease, and we think this is to be regretted, for there is abundant need of some such institutions conducted on scientific principles, instead of as private hotels.

Materia Medica and Therapeutics. By J. MITCHELL BRUCE, M.A., M.D., Physician and Lecturer on Materia Medica and Therapeutics, Charing Cross Hospital, etc., etc. Third Edition. London, Paris, New York, and Melbourne: Cassell & Company: 1886.

WE have much pleasure in bringing under the notice of practitioners and students this deservedly popular text-book on *Materia Medica and Therapeutics*. We are glad to see that it has reached a third edition, and that Dr Bruce has so quickly adapted his text-book to the new Pharmacopœia.

It is an excellent text-book, and will continue to be much used by students both in the English and Scotch Medical Schools.

Outlines of Infectious Diseases, for the Use of Clinical Students. By JAMES W. ALLAN, M.B., Physician-Superintendent City of Glasgow Fever Hospital. London: J. & A. Churchill: 1886.

THIS little volume was written by Dr Allan for the use of the students attending his course of instruction at the hospital. It by no means professes to be exhaustive, indeed its style is more that of jottings or hints, but, so far as it goes, it is admirable, and will be of great use to students attending both this and other clinics, and we heartily recommend it to them. When it reaches a second edition, the author would enhance its value by making it somewhat fuller, and mentioning more of the sequelæ which he must often meet with in his extensive opportunities for observation.

Elements of Practical Medicine. By ALFRED H. CARTER, M.D. Lond., M.R.C.P.E., Physician to the Queen's Hospital, Birmingham, etc. Fourth Edition. London: H. K. Lewis: 1886.

THE author of this work is quite justified in feeling gratified at the favour with which it has been received. It does not profess to

be more than an elementary book on medicine, but as such it has acquired a decided popularity, and it must be regarded as meeting a distinct want.

Gout, and its Relations to Diseases of the Liver and Kidney. By ROBSON ROOSE, M.D. Second Edition. London: H. K. Lewis: 1886.

WE so recently reviewed the first edition of this essay that little requires to be said on the appearance of a second edition, beyond noting that the rapid exhaustion of the first is a striking proof of the interest which is felt in the subject, and that men are seeking for a constitutional equivalent of certain morbid phenomena, and that gout is, for the present at least, suspected as being the cause of much that is at present regarded as obscure.

On Cancer of the Mouth, Tongue, and Alimentary Tract: their Pathology, Symptoms, Diagnosis, and Treatment. By FREDRICK BOWREMAN JESSETT, F.R.C.S., Surgeon to the Cancer Hospital, Brompton. London: J. & A. Churchill: 1886.

IN this book we have reproduced a series of lectures delivered at the Brompton Cancer Hospital. The reason given for their publication is stated by the author to be, that there is "no separate work that treats specially on this very important subject." Beginning at the mouth and lips, and going over the whole digestive tract to the anus, the writer describes minutely the various forms of cancerous disease to which each part is liable, and likewise their symptoms, pathology, diagnosis, and treatment. The various operations required for their cure or alleviation are detailed. The work is a valuable one, and must have given the author an immense amount of labour in its production. It contains a considerable number of illustrations and many very valuable tables. There may not be anything very new in the book, but it brings together most of what is known on the subjects treated of, and is an important contribution to the literature of cancer.

Lectures on Dietetics and Dyspepsia. By WILLIAM ROBERTS, M.D., F.R.S., Fellow of the Royal College of Physicians, London; Professor of Medicine to the Victoria University; Consulting Physician to the Manchester Royal Infirmary. London: Smith, Elder, & Co.: 1885.

THESE admirable lectures, which should have been noticed long ago, are marked in a high degree by the originality of views and

independence of thought so characteristic of Sir William Roberts, and it is impossible to rise from a perusal of them without a deeper insight than before into many of the problems connected with the digestive processes.

The opening lecture, which deals generally with the dietetic customs and habits of individuals and races, the use of various beverages, and the mutual adjustment of food and digestion, does not call for special comment. In it, however, there are many suggestive statements, more especially as regards the influence of alcohol, tea, coffee, and cocoa. Let us cite, for instance, the passage in which the author refers to the curious coincidence between the spread of tea, coffee, cocoa, and tobacco, and the growth of exact science and industrial arts at the same time that literature and art are practically at a standstill.

The following three lectures are concerned with the actions and effects of food accessories on digestion. The methods which the author has employed are very ingenious, and his results are of great importance. On the salivary digestion it is a matter of extreme interest to find that proof spirit, when not exceeding twenty-five per cent. of the whole digesting mixture, has no tendency to retard the process of salivary digestion, while whisky and, still more, brandy have in anything over five per cent. a powerful effect in retarding the process. Wines have a still greater influence in the same direction, more especially the acid wines of France and Germany, and vinegar as well as other acids are very active in this way. Contrasting tea and coffee, it is interesting to find that, while coffee of five per cent. strength has no retarding effect when not exceeding twenty per cent. of the digesting mixture, tea of the same strength exercises a powerfully retarding influence. This result is purely due to the tannin, which is highly inimical to the digestion of starch. Let us call attention to the following instructive remark of the author:—"Some persons have supposed that by infusing tea for a very short time—only two or three minutes—the passing of tannin into the infusion could be avoided. This is a delusion; you can no more have tea without tannin than you can have wine without alcohol. Tannin, in the pure state, is one of the most soluble substances known. If you pour hot water on a little heap of tannin it instantly dissolves like so much pounded sugar." And he goes on to state that he finds tea which has been infused for two minutes to be not sensibly inferior in its retarding power to that infused for thirty minutes.

We must pass over the preliminary remarks on the peptic digestion, merely remarking that the author finds that a proportion of one-fifth per cent. of hydrochloric acid to the digesting mixture is fittest for digestion, and that the rapidity of digestion depends directly on the amount of pepsin. We find here, again, that pure alcohol has but little effect on the peptic digestion, but

that wines have, on the contrary, a great influence in retarding the process—champagne, however, having least, while port and, still more, sherry have much greater effects. Tea and coffee, when of the same strength, have equal and excessively active powers in retarding the peptic digestion, and beef-tea and whey have also great influence in retarding the process. The only food-accessory which aids peptic digestion is simple aerated (carbonated) water. "The most favourable conditions," says the author, "for rapid digestion are supplied with hydrochloric acid, pepsin, and simple water."

The author goes on to state that this retardation of the digestive processes may be regarded as, on the whole, beneficial. In a state of high civilisation the food is not only more digestible, but also capable of being more thoroughly exhausted of its nutritive properties than is the case with rude peoples, and therefore "our highly prepared and highly cooked food requires, in the healthy and vigorous, that the digestive fires should be damped down in order to ensure the economical use of food." To be perfectly applicable this statement would probably require to be carefully compared with and modified by the facts learned regarding food habits of the various races of mankind, as there are no doubt many whose use of food and its accessories will not fit the author's theory. There can be little doubt, however, that it is in accord with the vast bulk of experience, and exceptions may only prove the rule.

The concluding lecture, "On the Acid Dyspepsia of Healthy Persons," derives considerable interest from its autobiographical character, so to speak; it is a useful sketch of a common and troublesome affection, throwing a good deal of direct as well as side light on its causation and treatment.

We have read these lectures with singular pleasure, and feel that we have largely gained from their perusal. Every practitioner should carefully read them, and no one can follow the author through his suggestive remarks without obtaining great personal benefit from them.

On some Forms of Paralysis from Peripheral Neuritis, of Gouty, Alcoholic, Diphtheritic, and other Origin. The Harveian Lectures for 1885. By THOMAS BUZZARD, M.D. Lond., Physician to the National Hospital for the Paralyzed and Epileptic. London: J. & A. Churchill: 1886.

DR BUZZARD could not have been more fortunate than he has been in the selection of a subject for his lectures, or more felicitous in his treatment of it. When they were originally published in the journals they attracted great attention from dealing with a comparatively new subject, and from the ability which he displayed in

doing so, and they will no doubt be widely read in their permanent form. Simulating as they do affections of the brain and cord, the diseases which are discussed by the author deserve careful attention, and are beginning to receive it. These most excellent lectures will serve their purpose admirably if they cause a still wider interest to be taken in peripheral paralysis.

On Asthma, its Nature and Treatment; containing an entirely New and Comprehensive Working Hypothesis, suggestive of New Remedies and of the more efficient Application of Old ones. By HORACE DOBELL, M.D., etc., etc., Consulting Physician, late Senior Physician, to the Royal Hospital for Diseases of the Chest, London. London: Smith, Elder, & Co.: 1886.

THIS work is in its way unique. It is a quarto volume, consisting of thirty-one pages and a diagram. It professes to be the elaboration of one of the author's "notes for future work," which he has had time to think out after "getting out of the 'hurly-burly' of London practice." Although purporting to be the exposition of "an entirely new and comprehensive working hypothesis," the work is oddly enough composed largely of quotations. The author, however, states that his hypothesis brings all these other views into "harmonious correlation."

The author's hypothesis is, to put it briefly, that asthma is due to some arrest in the yielding up of oxygen by the hæmoglobin of the blood; but he does not give any explanation of the cause of this arrest, or offer any suggestion why sudden changes of weather, and a hundred other apparently trivial circumstances, may set up a paroxysm of asthma. There is no special connexion, so far as we can see, between the author's statement of the hypothesis and the lists of drugs which mainly constitute the part of the book devoted to treatment; but the anhydrous oxide of barium is recommended, because it easily absorbs and delivers up oxygen. The volume is possessed of some interest, and from it the reader may get some "ideas."

On Cancerous Affections of the Skin; a Treatise on Epithelioma and Rodent Ulcer. By GEORGE THIN, M.D. London: J. & A. Churchill: 1886.

DR THIN has done well to embody in this monograph views on cancer which have already found expression in scientific papers. We congratulate him on the clearness which his style has now assumed, a feature not quite so prominent in some of his earlier writings. While accepting the doctrine that epithelioma and rodent ulcer may both be described as carcinomatous new growths, he regards them as specifically distinct, though neither the exclusive occupation of different localities nor the clinical features alone will

serve in all cases to decide between them. The histological characters of epithelioma of the skin are well known and agreed upon, yet the mode in which new cells are added to pre-existing epithelium is yet unsettled. Dr Thin is not inclined to accept the view that the rete Malpighi continually regenerates itself by a simple process of cell division, and gives some reasons for this which will not readily be controverted. Between the cells, and lodged in clefts, small deeply-stained nuclei are found. These are considered by able observers as nuclei of white blood corpuscles or "wandering cells;" and Thin believes that such, when brought under the influence of an epithelial cell, may become themselves epithelial. The opinion is plausible, and all the more because this inductive effect has in other circumstances a certain power. Thin sums up his ideas on epithelioma as follows:—"If we take a general survey of the process which we have been describing in detail, we shall observe that the chief elements in the morbid process consist in an abnormal condition of the epithelium of the skin. This abnormal condition is characterized, in the first instance, by a diseased activity of growth; in the second place, by a diseased state of the epithelium itself; and, thirdly, by effects on the subjacent tissue which lead to disruption and disintegration. This diseased epithelium possesses the faculty of destroying connective tissue, and of finding its way into lymphatic vessels, and by lymphatic vessels into lymphatic glands, and occasionally through the lymphatic system into the viscera, and there exercising the fatal power of multiplying at the expense of the normal elements amongst which it has passed." In rodent ulcer, on the contrary, much stress is laid on the fact that the lymphatics are never involved, while the mode of commencement is shown to be different from that in epithelioma. Histologically, too, the cells in rodent ulcer differ from those seen in epithelioma. Thin appears to waver a little as to the belief he at one time gave expression to, that in rodent ulcer we are dealing with an adenoma of the sweat glands. He must have been acquainted with the careful observations of G. Hume, though he does not directly allude to these, and the surmise is permissible that they had an influence in shaking, though apparently not in quite destroying, his confidence in the view of Verneuil that the sweat glands form the point of departure of the new growth in rodent ulcer. The sections on diagnosis and treatment throughout are sound and careful, but record no advances on the work of previous observers.

The Diagnosis and Treatment of Syphilis. By TOM ROBINSON, M.D.
London: J. & A. Churchill: 1886.

WE have to congratulate Dr Robinson upon producing a short, readable, and in some ways original, book on syphilis. He wishes

to abolish the term hard chancre, because he thinks its name implies some relationship to the soft chancre. We do not quarrel with him in his desire to use the phrase "initial lesion of syphilis" instead, but his reasons for the change are bad. There is as much necessary relationship between a lupoid and a simple ulcer, both being called ulcers, as between a hard and soft chancre. Besides, as our knowledge of the etiology of soft chancre is so vague, we are not in a position to be dogmatic about names. Why not call a hard chancre a syphilitic sore, and so keep to two words instead of four, and also avoid having a theoretical basis for the names? Syphilitic warts are described, but we are unaware of the existence of such a lesion.

The author discards the terms secondary and tertiary, and calls all constitutional symptoms sequelæ. He suggests the following division of skin manifestations:—I. The Congested; II. The Inflammatory; III. The Scaly; IV. The Ulcerating. He confesses that these groups are not separated from each other by any distinct line of demarcation, so we fear there is not much clearing up of difficulties by the suggestion. We admire the tendency to generalization in this book, and can heartily recommend it.

Atlas of Venereal Diseases. By P. H. MACLAREN, M.D., F.R.C.S.E.
Edinburgh: Young J. Pentland.

Fasciculi III. and IV. of this capital atlas have now been sent to us. The representations of warts on the penis and serpiginous and rupial syphilides in Part III. are worthy of special praise.

In Part IV. the same may be said of the sketches of soft sores and vulvar condylomata. The descriptions of the plates are excellent.

The Refraction and Accommodation of the Eye and their Anomalies.
By E. LANDOLT. Edinburgh: Young J. Pentland: 1886.

Of late there have appeared a considerable number of books on refraction. This is certainly more owing to the increased interest taken in the subject than to any great advance which has been made in this particular branch of ophthalmic science. Many of these books, and more especially, it must be confessed, those which have appeared in English, are not only altogether too elementary, but are wanting in accuracy. The book before us is, however, an accurate and exhaustive treatise on the whole subject, written in a clear, readable style, which is, fortunately, not marred by translation. We have no hesitation in saying that it will prove a more satisfactory book for even the beginner to study than any of the

so-called elementary treatises. Donders' great and original work on refraction may be said to be in a measure out of date, not so much on account of new discoveries, but because of the introduction since it was written of the metrical system of measuring focal distances, etc. The present translation of Landolt's work is the next most important treatise which has appeared in English. It is divided into two parts, the first being theoretical, and the second clinical. Of these the clinical is by far the better; indeed, it is the treatment of this portion which raises the work above the level of a compilation. In it there are two great errors, at all events, to some extent rectified. These are, firstly, the relegation of all cases of myopia to the category of pathological conditions; and, secondly, the confounding of insufficiency of convergence with insufficiency of the internal recti. These errors have been too blindly accepted on the authority of Donders, and are instances of how long the dictum of a pioneer may remain unchallenged. That the great majority of cases of myopia are merely expressions of an inherited type of eye, and not due to disease at all, there can be no doubt; and when we consider that it is the same want of conformity between the length of the antero-posterior axis of the eye and the refractive power of the dioptric media which gives rise to both hypermetropia and myopia, it is astonishing that this should not long ago have been apparent. A myopia due to disease certainly also exists, and to this form Landolt gives the name of malignant myopia. We are inclined to think, however, that even he does not draw a sufficiently clear line between the two forms. In this country, at least, the malignant form is most common amongst the non-reading classes, and, although possibly it may be adversely influenced by close application of the eyes, it is certainly not set up by study. With respect to typical myopia many alarmist views have been aired, especially in Germany, and the influence of study undoubtedly to a great extent exaggerated. The numerous statistics which have been made, and which are taken as favouring such views, appear to us to afford by no means conclusive evidence in this respect, although it is difficult to avoid the suspicion that the too constant use of the eyes for near vision has not some tendency to develop or increase myopia. Landolt enters into an exhaustive discussion of such views, but fails, we think, to sift sufficiently the reasonable from the absurd. It should always be remembered that, whilst the conditions of uncivilized life would tend to abolish the myopic type of eye, those of civilized life rather act in the opposite direction, and that independently of any direct influence of study. The portion of the book on insufficiency of convergence is interesting, though we are inclined to think the author takes a somewhat too sanguine view of the benefit to be derived from operative interference. This is no doubt owing to a too uncritical acceptance of the result of the examination of the degree of convergent power

before and after operation. Of all objective examinations this is certainly the least satisfactory, as so much depends on the amount of effort put forth by the patient as well as on practice.

The theoretical part of the treatise rather errs on the side of too great elaboration: it partakes too much of the nature of examples and exercises on problems in geometrical optics, many of which, strictly speaking, have no direct bearing on the subject. In this section the author has evidently borrowed largely from the works of Helmholtz, Neumann, and Matthiessen. A few general problems giving the *raison d'être* of the cardinal points of Gauss and Morbius, and the influence which their position for the eye under different circumstances of optical correction, accommodation, etc., have on the retinal images is all that is required in a text-book on the errors of refraction of the eye. Indeed, the most essential theoretical matter in this respect is not given with anything like the fulness as, for instance, in Nagel's chapter in the well-known Graefe-Sæmisch handbook.

Not the least noteworthy feature of the book is the manner in which it is published. The illustrations are well chosen, and the woodcuts as well as the coloured drawings, which are fairly representative, are admirably executed. As to the translation, it has been well done, and has the merit of being wonderfully free from Americanisms.

Augenheilkunde und Ophthalmoskopie. Von Dr HERMANN SCHMIDT-RIMPLER. Second Edition, pp. 642. 1 Coloured Plate and 163 Woodcuts. Braunschweig: Verlag von Friedrich Wreden: 1886.

THIS book forms the tenth volume of Wreden's collection of short medical text-books intended for practitioners and students. It is not often that a book of this description reaches a second edition in less than a year. This has been the case, however, with Professor Schmidt-Rimpler's work, and the reception it has met with in Germany must be very gratifying to him.

The book is divided into four parts. The first consists of an introduction to the examination and treatment of the eye, and treats of errors of refraction and accommodation, with amblyopia and amaurosis. The second part treats of ophthalmoscopy, the diseases of the optic nerves, the retina, the choroid, and vitreous humour. The third part deals with glaucoma, diseases of the lens, the conjunctiva, the cornea, the sclerotic, iris, and ciliary body, sympathetic ophthalmia, and suppurative choroiditis. The last part is taken up with the diseases of the ocular muscles, the orbits, eyelids, and the lachrymal apparatus.

The chapters on the physiology of the eye and on refraction and accommodation are particularly clear, and well repay study. The

diagnosis and prognosis of the various diseases are very fully and clearly given, and the treatment recommended is typical of German practice, and is well up to date.

The book is well printed in Roman characters, and the illustrations are very good. Professor Schmidt-Rimpler writes in a concise and attractive style. It has met with a well-deserved success in Germany, and we hope it may ere long appear in English.

Revue de Chirurgie.

THIS excellent journal continues to hold its own as the representative of French Surgery. Among the original articles in the recent numbers we may notice a few: one by E. Kirmisson (May number) on "Excision of Tumours in Scarpa's Triangle," is of considerable interest. By clinical observation and reference to published cases the author shows:—1. That under antiseptic precautions mere exposure of even the coats of the femoral artery and vein is of little importance. The risk of secondary hæmorrhage is only present when the wound becomes septic, or when unduly strong antiseptic lotions are used. 2. That when the femoral vein is wounded, a ligature above and below the wounded point has few risks—apart from sepsis—and is much safer than a simultaneous ligature of the artery and vein. Ligature of the artery alone is a very uncertain mode of controlling the venous hæmorrhage. 3. That simultaneous ligature of the femoral artery and vein in five out of seven cases has led to gangrene and death, but that this result is much more apt to follow a ligature *above* than *below* the origin of the profunda vessels. Since recovery has been known to follow simultaneous ligature of both vessels even above the profunda, when such an operation is required, the surgeon must be guided by the condition of the patient and other circumstances whether he shall risk this twofold ligature, leave in part of the tumour he is trying to excise, or perhaps (what the author does not suggest) amputate at the hip-joint. The risk of injuring the anterior crural is considered very slight. If the peritoneum be opened, it may be sutured and left without much fear.

In the July number J. Lucas Championnière narrates the details of a successful case of amputation of the upper limb, including part of the clavicle, the scapula, and scapular muscles. The arm had been crushed by machinery, and at first no systematic operation was attempted; but as septic fever was beginning to show itself, the patient's only chance was the clean sweep of bruised and sloughing tissue which was so successfully carried out. An artificial arm and shoulder were fitted on to the chest, which not only preserved the appearance of the patient's trunk, but restored his balance, and helped, to a limited extent, to make up for his lost arm.

J. Hennequin in the same number has a long article on the "Scientific Application of Continuous Extension to the Lower Limb." His plan is to place the limb in the "physiological position," i.e., thigh horizontal, knee flexed, foot at right angles, while the patient is recumbent. This can only be done by cutting out the lower segment of the mattress or arranging the leg outside of the bed. The limb is enveloped from the toes to above the seat of fracture in cotton wool, and extension is applied by means of a folded cloth over the cotton wool, arranged in the figure of 8 manner at the knee. The centre of the cloth is placed over the front of the lower part of the thigh, the ends are then brought round and crossed in the popliteal space, and taken forward over the front of the tibia, where they are knotted and attached to the weight and pulley. At the seat of fracture the limb is fixed by surrounding splints. Although the author believes that his method is the one calculated to give the best possible results, it is very doubtful if it will supplant those already in use.

An interesting and exhaustive article will be found in the August number by A. Poulet, "On Fatty Tumours of the Hand and Fingers;" also one by Redard on "Ephemeral Glycosuria in Surgical Affections," in which it is shown that sugar is often present after severe injuries—before any anæsthetic is given—and following simple wounds and inflammations of the skin. A very remarkable paper follows by C. Vaulair, "On the Organization of India-rubber Drainage-Tubes in Tubular Suture of Nerves." In the course of some experiments—for the details of which we are referred to another paper—the author had inserted, under antiseptic precautions, a piece of gray vulcanized rubber tubing (measuring 3 cm. long, $4\frac{1}{2}$ mm. wide, and having its walls $1\frac{1}{2}$ mm. thick), in the course of a large nerve in an animal. The tube was left in for $7\frac{1}{2}$ months, without causing local disturbance; and when the parts were then examined, it was found that the tube had been for the most part absorbed, and was represented by an irregular and incomplete sheet of india-rubber round a mass of tissue occupying its original interior. The whole mass was examined carefully under the microscope, and is minutely described. It is sufficient to notice here that this drainage-tube was absorbed or organized in the same sense that catgut is, or that a decalcified drainage-tube is, only taking a much longer time in the process. The fact is of great interest, and will doubtless admit of numerous practical applications.

Medical Chronicle: A Monthly Chronicle of the Progress of Medical Sciences. May 1886. Manchester: John Heywood, Deansgate and Ridgefield.

THE high character with which the Journal originally started is evidently being maintained in its later numbers. In the copy

before us, one of the original articles is by Professor Dreschfeld on the "Clinical Diagnosis of Cancer of the Stomach," another by Dr Ross on the "Morbid Anatomy of Aphasia," and another by Dr Ashby on "Infant Feeding." These writers' names are a sufficient guarantee for the value of their articles, and readers will not be disappointed. The abstracts from current literature are well chosen and carefully executed. In every way the editors may be congratulated on the success of their undertaking.

1. *The Boston Medical and Surgical Journal.*
2. *The Journal of the American Medical Association.* Chicago.
3. *The Medical Record.* New York.
4. *Medical News.* Philadelphia.
5. *Polyclinic.* Philadelphia.

THESE papers, with the exception of the last, which appears monthly, are published every week. Coming as they do from different cities in the United States, they represent the work of the profession in different districts there. From specimen copies which have been sent to us for review it is evident that they are all first-class journals, between which it would be invidious to distinguish. They cannot fail to be appreciated in this country, not only for the value of their original matter, but also on account of their critical editorial articles, and for the reports of the various American Medical and Surgical Associations which they furnish.

Religio Medici. By Sir THOMAS BROWNE, M.D., with the "Observations" of Sir KENELM DIGBY. Edited by Professor HENRY MORLEY. Cassell & Company: London, Paris, New York, and Melbourne.

THIS little book is a good example of the extreme cheapness of several editions of standard volumes printed at the present time. For the sum of threepence one can purchase a copy in good print and of convenient size of the *Religio Medici*, or "Faith of a Physician," one of the greatest writings of the seventeenth century. A short sketch of the author's life is given in the form of an Introduction, and the volume ends with the "Observations" of Sir Kenelm Digby, a contemporary of the author.

The only fault that can be found with the print is that the words are placed rather too far apart, which is apt to dazzle the eyes; but this is hardly noticeable, and it is only after reading for some time that one is sensible of it.

Part Fourth.

PERISCOPE.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By WILLIAM CRAIG, M.D., F.R.S.E., Lecturer on Materia Medica, Edinburgh School of Medicine, etc., etc.

DIFFERENTIAL TOXICOLOGICAL BEHAVIOUR OF GELSEMIUM AND STRYCHNINE.—The possibility of mistaking a case of strychnine poisoning with criminal intent for an accidental intoxication caused by a prescribed preparation of gelsemium recommended to our notice Raimondi's pertinent comparative investigations as set forth in the *Ann. di chim. Med.*, Sett., 1885. If it is possible to recover enough of the poison to enable us to experiment with it on warm-blooded animals, the nature of the poison is readily established. If, however, the scantiness of the substance in question allows only experiments on frogs, the following differential features must be our guide:—1. In gelsemium-poisoning the motor paralysis has a central cause, which does not apply to strychnine. 2. The effects of strychnine manifest themselves with equal intensity over the whole body, while in gelsemium-poisoning the posterior extremities show the clonic-tonic convulsions more distinctly than the anterior ones. 3. Immediately or shortly after one strychnine paroxysm, a second may follow; in gelsemium-poisoning considerable time usually elapses between the single paroxysms. 4. The stage of tetanus from strychnine may last several days—that of gelsemium rarely exceeds an hour. 5. In chemical respects the two drugs present also some characteristic differences, which, under the name of Schwarz's differential reactions, are detailed in Raimondi's paper.—*Therapeutic Gazette*, August 1886.

COCAINE IN CATARACT EXTRACTION.—In the *Journal of the American Medical Association* (21st August 1886), Dr George E. Frothingham publishes some cases illustrating the safety of cocaine as an anæsthetic in cataract extraction, and summarizes his conclusions as follows:—1. Cocaine relieves the operator from the embarrassments during the operation for cataract that arise from vomiting; also from the agitation of his patient which results from excessive bronchial secretion, or stertorous breathing. These are often very troublesome when ether or chloroform is used. 2. The danger to the result which often arises from nausea and vomiting after the extraction, when other anæsthetics are employed, is very surely avoided when cocaine is selected as the anæsthetic agent and is properly used. 3. The danger arising from the depressing effect of cocaine upon the nutrition of the cornea is no greater than

in cases where ether or chloroform are used. The depression of the circulation, which often arises from either of them, may affect very injuriously the corneal nutrition. 4. The disturbance of the circulation of the interior of the eye, and consequent danger of panophthalmitis from this cause, is probably less in using cocaine for this operation than in resorting to general anæsthesia. 5. The danger of sepsis and consequent panophthalmitis from the use of cocaine may be avoided by using only fresh solutions.—*Therapeutic Gazette*, September 1886.

ON THE ANÆSTHETIC ACTION OF SUBCUTANEOUS INJECTIONS OF COCAINE.—Wölfler has made some very interesting experiments with the view to ascertain the anæsthetic effects of hypodermic applications of cocaine (*vide Heitler's Centralblatt*, April 1886, p. 172). He found that an injection of about $\frac{1}{4}$ drachm of a five per cent. solution of cocaine produces within two or three minutes an anæsthetic condition lasting for 20 to 25 minutes. The region of complete anæsthesia had a diameter of 2 to 3 centimetres, while the adjacent skin was in a state of semi-anæsthesia for a distance of 2 to 3 centimetres. Further injections widened the sphere of anæsthesia. Needles introduced into the skin to a depth of 3 centimetres were not felt. Wölfler employed these injections practically for the extirpation of small tumours, removal of all foreign bodies, opening of abscesses, and similar minor operations. In larger incisions the injections are best made at both termini of the incision. Wölfler obtained excellent results with cocaine injections in neuralgias, especially of a strictly localized nature. Though not meeting himself with any accident in the employment of cocaine, Wölfler advises, nevertheless, to be cautious in its use, as Heyman had recently observed a severe intoxication after its application. (Cocaine had been applied by the brush to the larynx of a boy 10 years of age previous to the removal of papillomata, whereupon a state of apathy set in which lasted for five hours).—*Therapeutic Gazette*, September 1886.

ARTERIAL PRESSURE IN BRAIN AND FOREARM AS INFLUENCED BY VARIOUS DRUGS.—Capelli and Brugia, of Milan, have made some very interesting experiments on the blood pressure as altered by various drugs. We condense their principal conclusions arrived at from *Schmidt's Jahrbücher*, 22nd June 1886:—1. Inhalations of nitrate of amyl cause a fall in the pressure, first in the brain, and then in the forearm. Besides, there are, however, some variations of pressure in both regions which are not isochronic. 2. Morphine applied hypodermically in small doses produces at first a vascular contraction, and then a dilatation, most pronounced during sleep. The latter condition leads to an increase in volume of both the brain and the forearm. 3. Chloral causes at first cerebral anæmia on account of the decreased resistancy of the peripheral arteries; later there appears a vascular paresis, with a subsequent increase in

volume of the brain. 4. Paraldehyde does not always produce hypnotic effects. Soon after application of the drug the cardiac power increases, and reaches its maximum during the deepest hypnosis. If no sleep result, this action upon the heart is less pronounced. 5. Hyoscyamine at first acts as an excitant; later the frequency of the pulse increases, while its pressure falls, until ultimately the normal state of both frequency and pressure are regained. In a cold bath the peripheral arteries contract, the volume of the brain augments, and the pulse is first quickened and later slowed. In a warm bath the experimenters found, contrary to the usually assumed venous stagnation of blood in the brain and a diminished vascular tension, during the entire bath a certain degree of vascular contraction and cerebral anæmia, with peripheral vascular congestion.—*Therapeutic Gazette*, September 1886.

INHALATIONS OF PURE CARBOLIC ACID IN WHOOPING-COUGH.—Though the benefits derived from the inhalation of carbolic acid in the treatment of diphtheria and pertussis have long been well understood by practitioners, the exhibition of sufficiently strong solutions of carbolic acid have nevertheless been omitted in view of the great sensitiveness of children against this drug. As we learn from the *Deutsche Medicinische Wochenschrift*, 1886, xii. 21, Dr Pick, of Coblenz, has treated a number of children affected with whooping-cough by fixing an inhalation-mask in front of the mouth and nose, and pouring into a piece of cotton in the interior of the mask 15 to 20 drops of pure (liquified) carbolic acid. The mask has to be worn if possible the entire day, but at least for six to eight hours, and the cotton is to be renewed three times daily. A careful investigation of the urine will give a timely warning of the danger of an intoxication. In cases treated by Pick the results were entirely satisfactory, so that he feels justified in recommending these inhalations as an efficient means to combat the affection.—*Therapeutic Gazette*, September 1886.

ARBUTIN.—Dr Borisoff, of St Petersburg, having recently examined "the pharmacological action of arbutin, a glucoside obtained from the leaves of the *Uva ursi*," by means of experiments on dogs and frogs, finds that it has a decided diuretic effect, due to stimulation of the epithelium of the Malpighian bodies and urinary tubules of the kidney, and to increase circulation of blood through the kidneys. Though large doses of arbutin exercise a paralyzing effect on the brain of the frog, little general disturbance is caused by the drug in warm-blooded animals, even if given in considerable doses. It exercises a distinct antiseptic influence in lessening the formation of pus in cases of purulent inflammation of the bladder and kidney. Dr Borisoff thinks this drug may be found of much use in practice. He would give larger doses than those which have been suggested by some writers—*e.g.*, M. Levine. He would commence with from 1 to 2 grms. (15 to 30 grains), given

several times a day in powder, or dissolved in water. He has made a diligent search through the scientific journals of all nations for the literature of the subject, and has collected no less than forty-three different articles, mostly from German sources, but with a few American and Russian exceptions (*Lancet*, 24th July 1886).—*Therapeutic Gazette*, September 1886.

DEPRESSING EFFECTS OF ANTIPYRIN.—This drug has recently been administered in several cases of high temperature occurring in the station hospital at Peshawur. Some of these cases were suffering from enteric fever, others from remittent fever. The temperatures ranged as high as 105°. The administration of the antipyrin usually, not invariably, was followed by a steady decline in temperature to the normal point; but the intermission rarely lasted more than from twelve to twenty-four hours. The drug had no permanent influence in reducing temperature or modifying the *materies morbi*. But in one case more serious results occurred. A dose of 30 grains of antipyrin was administered to a case of enteric fever, thirty-three days in hospital, and slowly recovering. All acute symptoms had subsided, but the evening temperature remained high (104°). In about four hours after the medicine was taken the temperature fell at once to 95°, and this was accompanied by the most alarming collapse, sighing respiration, cold extremities, clammy surface, and feeble pulse. In a few hours, under stimulants, these depressing symptoms disappeared; and at 6 A.M. the temperature was again at 104°. The drug was not tried again in this case; and my recent experience has led me to look with a little suspicion on so uncertain a remedy (Edwin Fairland, Surgeon-Major Medical Service, Peshawur).—*British Medical Journal*, October 1886.

ANTIPYRIN AND TEMPERATURE.—A girl, aged 12, who was suffering from the symptoms of large white kidney, with highly albuminous urine, came under my care at the Samaritan Hospital, in May 1886. On the first occasion, when antipyrin was prescribed, the temperature was 103°; a fall of 3 degrees took place in twelve hours after taking 5 grains of the drug, with much relief to the head. On the 25th, when the temperature again rose to 103°, 5 grains of antipyrin brought it down to 100° in four hours, reduced the frequency of the pulse, and calmed excitement. On the 30th, when the temperature was 104° at nine P.M., a fall of 3 degrees took place in three hours after the administration of 5 grains of the drug. On 9th June, when the temperature was 104°, 7 grains of antipyrin given at four P.M. caused the mercury to fall to 99°·4 at eight P.M. Whenever the temperature is disposed to run high in the febrile affections of children, as in pneumonia, typhoid fever, and exanthemata, antipyrin appears to be a remedy of decided value. In these diseases antipyrin almost invariably reduces the temperature very quickly, sometimes as much as 3 or 4 degrees in

a few hours, but it soon rises again. Sweating is not invariably produced; when it is, the falling is more rapid and decided. No purging or ill consequences followed the administration of the drug in the cases that have come under my notice. My friend, Dr Moncorvo, of Rio de Janeiro, speaks very highly of it in a recent treatise of high merit, entitled *De l'Antipyrine dans la Thérapeutique Infantile* (William H. Day, M.D., 10 Manchester Square).—*British Medical Journal*, October 1886.

ON THE INFLUENCE OF ANTIPYRIN ON THE ELIMINATION OF NITROGENOUS MATTERS.—The steadily increasing utilization of antipyrin as a prompt, convenient, and innocuous antipyretic has naturally stimulated researches as to the physiological aspects of the drug. Among these, the influence which this drug exercises on the tissue changes invites, of course, our special interest. Umbach's experimental studies, executed in V. Nencki's laboratory at Berne, and reported in the *Archiv für experimentelle Pathologie und Pharmacologie*, vol. xxi., Nos. 2 and 3, 1886, are well adapted to enlighten us in regard to the subject in question. Umbach made the observations pertaining to the elimination of nitrogen and uric acid on his own person, in order to obtain very reliable results. By rigorous dietetic measures the observer succeeded in establishing a certain normal figure for the elimination of nitrogenous matters, with but slight daily variations (1 dr. *pro die* at the utmost). Uric acid was determined by precipitation with muriatic acid, and the total value of the eliminated nitrogenous matters was obtained by Kieldahl's process, as modified by Petri. After ten so-called normal days, Umbach took on two consecutive days 1 dr. of antipyrin each, and noted soon a general excitation, insomnia, and a peculiar burning sensation of the skin. The minimum of the bodily temperature was $36^{\circ}1$ C. (a reduction of $1^{\circ}4$ C.), and the frequency of the pulse decreased about fourteen beats per minute. It was ascertained that antipyrin, while not altering the elimination of uric acid, caused a reduction of 30 grains (corresponding to one drachm of urea) in the figures representing the total of the eliminated nitrogenous matters. A second series of observations instituted on his own body furnishing quite analogous results, Umbach felt safe in announcing the following axiom:—"Antipyrin, like quinine and other antipyretics, materially lessens the elimination of nitrogenous matters, and can therefore be said to cause a decrease in the tissue-changes of the respiratory and alimentary systems." While antipyrin was thus shown to reduce the tissue-changes, it was proven by similar experiments that the sulphates cause an increase in the total of eliminated nitrogenous matters, with a simultaneous decrease of uric acid. Umbach explains this influence of alkaline salts—as in the case of carbonates—as resulting from the increased alkalescence of the juices, and the thus heightened oxidation processes in the body. An investigation of

the influence of antipyrin in fever patients instituted by Wiczkowski led to very similar results. This observer also noted a considerable diminution of the chlorides in the urine in the apyrexia produced by antipyrin, even if a sufficient amount of chloride of sodium be ingested.—*Therapeutic Gazette*, September 1886.

PERISCOPE OF MEDICINE, CLINICAL AND PATHOLOGICAL.

By G. A. GIBSON, M.D., and WILLIAM RUSSELL, M.D.

The compilers of the Periscope consider it desirable to state that they do not necessarily endorse the views contained in any of the papers from which abstracts have been made.

CONTRACTURE DIATHESIS, PARTICULARLY THE CONTRACTURE PRODUCED IN HYSTERIC BY THE APPLICATION OF A LIGATURE.—Charcot has given the name of *Diathèse de contracture* to a special nervous state which is neither contracture nor paralysis, but which at the same time contains a little of both. The author of this paper, M. Berbez, says they were led in the following manner to note the frequency of the contracture diathesis in hysterics at least. M. Charcot gave a lecture on intermittent limpness (*claudication*), caused by obstruction, more or less complete, of the arteries of a limb, and ascribed to local ischemia the rigidities, the contractures more or less prolonged, which supervened in the ischemic muscles. Wishing to verify this hypothesis, M. Charcot applied on many of the *externes* Esmarch's band without obtaining contractures. In this state of ischemia the muscles were exhausted by the patient being made to squeeze the dynamometer, but even then contracture did not supervene. Very different, however, were the results obtained by experimenting on hysterics. All, or nearly all, of them developed contracture with the first turn of the band. This led Charcot to think that ischemia was not the cause of the contracture. They applied the band from the tip of the fingers to the wrist, then at the elbow, then the band was carried as high as the insertion of the deltoid. In all these cases the contracture was produced, and rose with the height to which the band was carried. Then the band was applied to the middle part of the forearm or limb, and contracture followed in the same way. The contracture which the circular band produced disappeared nearly always after its removal. In two cases it became more generalized—once over the whole body, in another to the right side. In some minutes the contracture invaded the four limbs in a young woman, who came as an out-patient, and to whom the band of contracture was applied in the middle part of the right forearm. General massage used at once made the rigidities disappear completely. This forms an easy and prompt method of discovering the contracture diathesis and hysteria in cases of difficult diagnosis.—*Le Progrès Médical*, 9th October 1886.

THE CARDIAC COMPLICATIONS OF BRIGHT'S DISEASE.—Dr J. T. Whittaker, Professor of Medicine in the Medical College, Ohio, in a paper with the above title, states that hypertrophy of the left ventricle is present in every case of chronic nephritis. That it is only present in granular kidney is a mistake. There is no such thing as a chronic nephritis without cardiac hypertrophy, unless the patient is too feeble to develop an increase of tissue in any organ. Apparent exception is offered in the last stages of Bright's disease when hypertrophy has given place to dilatation. Any hypertrophy of the heart without valve lesion to account for it ought to excite suspicion of some form of Bright's disease, not necessarily cirrhosis. A hard, wiry pulse, in the absence of fever or evident disease, raises suspicion, and the sign is valuable, as it shows itself very early in the course of the disease. Often the increased impact of the heart is observed in a few weeks after the beginning of the disease. It develops quickly and most completely in otherwise healthy and robust subjects. Hypertrophy is preceded by a rise in tension of the aortic system, and the pulse shows changes before the heart. The frequency of the pulse increases with the hypertrophy, but when the heart begins to flag the pulse becomes rapid, feeble, and even fluttering. Then, as in the last stages of primary heart disease, the kidneys become secondarily involved, and it is impossible to declare the order or sequence of the diseased process. The presence of albumen in the urine in a general way denotes disease, but its absence by no means excludes it. Often in cirrhosis no albumen is found for days, healthy urine being secreted from healthy portions of the kidneys, the diseased portions being completely blocked. Moderate hypertrophy of the heart makes itself most manifest to the hand placed on the chest. Accentuation of the aortic second sound is the next most valuable sign. As accentuation of the pulmonary sound points to hypertrophy of the right ventricle from mitral disease, so accentuation of the aortic sound points to hypertrophy of the left ventricle, due chiefly to Bright's disease. In otherwise healthy subjects and in children the hypertrophy often rises superior to the demand. Then succeed violent palpitation, audible throbbing, hyperæmia of the brain, intense headaches, vertigo, and epistaxis. In very feeble patients the hypertrophy may fail to develop. When the heart begins to fail, the pulse loses its hardness, becomes frequent and small. Stasis in the lungs from incomplete emptying of the left ventricle, accumulation in the left auricle and pulmonary veins, is at first obviated by hypertrophy of the right ventricle which now sets in, but it soon yields to the strain, when bronchitis, dyspnoea, asthma, and pulmonary oedema supervene. There is headache from anæmia of the brain, and general dropsy commences, which gradually increases to the end. Treatment—When hypertrophy is excessive the heart should be quieted by rest, and bromides, or occasionally chloral, or, if neces-

sary, ice, applied over the heart. When failure is feared, rest is also very valuable. Change to a warmer climate sometimes produces a cure. Sooner or later digitalis is required, and should be given in small doses at first, for fear of over-stimulating the heart. Should it be continued long after its full effect on the pulse is produced the heart is tetanized, and collapse occurs. Dropsy is, in general, the best indication for the use of digitalis, because it indicates failure of compensation. When the heart fully responds to digitalis, and its further use is contra-indicated, tonics, such as iron or arsenic, should be used. When the heart no longer responds to digitalis, relief may be obtained from the use of alcohol and morphia.—*Philadelphia Medical News*, 31st July 1886.

VASO-MOTOR PERTURBATION IN THE ETIOLOGY OF PNEUMONIA.—The author of this paper, Dr A. B. Shaw, Professor of Medicine in the Beaumont Hospital Medical College, St Louis, argues that pneumonia is directly traceable to some gastric disturbance causing perturbation of the vaso-motor centre in the medulla by impressions made thereon by nerves connecting the centre with the *prima viæ*, particularly the stomach, which form a centripetal path for impulses originated within the digestive tract. If the supposition that pneumonia is produced by acute indigestion is correct, we are compelled to believe that through the nervous system alone could the gastric irritation produce pneumonia, and that such a result could only follow some perturbation of that centre which presides over the function of vegetative life in the lungs, the vaso-motor centre. That this centre is implicated in pneumonia is suggested by the evidence of vaso-motor disturbance, manifested by the characteristic unilateral flush so commonly present in pneumonia. And that this same centre is perturbed by acute indigestion is evidenced by the facial flushing so often present in cases of acute gastric disturbance. Also that faulty digestion often irritates the respiratory organs, and gives rise to sudden spasmodic cough. Granting that there must primarily be some peculiar vice of constitution predisposing to pneumonia, are we not justified in regarding faulty digestion of an acute character as a common cause of pneumonia, particularly the catarrhal variety, justly to be classed as but second to exposure to variations of temperature?—*St Louis Courier of Medicine*, July 1886.

ETIOLOGY OF EGYPTIAN DYSENTERY.—From previous observations by Lambl, Lösch, Grassi, Perroncito, and Sonsino, it is known that amœbæ are sometimes present in the fæces, and Koch discovered them in dysenteric cases in Egypt in 1883. Kartulis has devoted attention to the subject, and has found amœbæ in the dejections of every undoubted case of dysentery which he has seen, while they have invariably been absent in all the other cases he has watched in the Greek and Arab hospitals. Altogether he has observed about 150 cases of dysentery, among which there were 12 autopsies.

He describes the amœbæ as being from $\cdot 012$ and $\cdot 030$ in size, and composed of a plasma resembling fluid mucus, whence he proposes the name "myxoplasma" in contradistinction to hyaloplasma. The inner portion has many granules ("granuloplasma") and a large nucleus, usually feebly glistening, and placed in the centre; the nucleus may, however, be granular, and is sometimes double. Vacuoles are always present, the number in each amœba never exceeding ten. Many of them move and alter their shape very rapidly and actively. The myxoplasma, granuloplasma, and nucleus are easily stained by all colouring agents; the vacuoles, of course, remain unaffected by the stain. The amœbæ are found in all stages of dysentery, acute as well as chronic, but they are more numerous in the old-standing cases. Kartulis is convinced that they are the cause of the dysentery, but is compelled to acknowledge that their entrance into the body and subsequent development are at present shrouded in darkness. He attempted to repeat the experiments of Lösch by injecting amœbæ into the bowel of animals, but his experiments were not followed by any result.—*Archiv für pathologische Anatomie und Physiologie und für klinische Medicin*, September 1886.

PERISCOPE OF GYNÆCOLOGY AND MIDWIFERY.

By J. MILNE CHAPMAN, Inverness.

IS DISEASE OF THE UTERINE APPENDAGES AS FREQUENT AS IT HAS BEEN REPRESENTED? (Henry C. Coe, *Amer. Journ. of Obstet. etc.*, June 1886).—The writer, who is pathologist and surgeon to out-patients to the Women's Hospital, New York, assures his readers at the outset that the title of his paper does not imply so much an expression of defiant scepticism as it does a mild negation. Considering the great interest now being manifested in the operations for the removal of the uterine appendages, it may not be amiss to quote rather largely from Dr Coe's paper, embodying as it does the convictions of one who has studied the subject from the standpoint of the pathologist, and who feels that we are unquestionably allowing our ideas on ovarian pathology to be tinged with the enthusiasm of the surgeon instead of with the cold, calculating spirit of the morbid anatomist. The first point considered in the paper is, What is a normal ovary? and we quote the answer in full:—"It was easy enough to find a definition before the diagnoses of 'chronic oöphoritis,' 'cystic degeneration,' and the like became so common, that the existence of a strictly normal organ (except in the lower animals) has come to be somewhat problematical. Waldeyer's classical monograph, with its oft-copied drawings, would seem to be the best answer to any doubts on this subject, yet how rarely does one succeed in obtaining such typical sections of the human ovary as those which are figured in the books! The stroma

is full of surprises for the microscopist, appearances of which he can find no description, possibilities for original work that have not yet been exhausted. For an observer to jump at the conclusion that a variation in the usual structure of the organ is pathological because it is new to him, would be as illogical as it would be to assume that there remain no more unrevealed facts in medicine because so many have already been discovered. It should be remembered that within the ovary there is ceaseless activity, changes as subtle and eluding as the vital principle itself. Ovisacs, each containing the promise of a new life, are constantly pushing their way, like the coral workers in the ocean depths, up to the surface, where (like them too) they die, leaving behind them their empty dwellings. From infancy to age these mysterious transformations go on—none the less mysterious because we profess to have such a familiarity with them. What wonder, then, that the minute structure of the gland is not constant, either in different ovaries, or in different portions of the same ovary. The Graafian vesicles themselves, which are such familiar objects to the student of histology, are subject to frequent metamorphoses, while their origin and final degeneration are still a matter of dispute. Under these circumstances, how difficult is it to affirm where the normal ends and the pathological begins! Cirrhosis of the ovary is ordinarily defined as a hypertrophy of the fibrous tissue, but this same condition may be present after the menopause and yet fall within the limits of the ordinary senile degeneration. Nothing is more common than to hear that an ovary was removed because it was 'cystic,' yet no one has defined the exact size to which an ovisac must attain before it ceases to be a vesicle, and becomes a cyst. I have found a perfect ovum within a vesicle as large as a marble. There was no reason to doubt that this ovum would have been capable of impregnation, yet the ovary was removed on the ground that it was functionally useless! This is an assumption of prescience on the part of the surgeon that is not warranted by the facts." The writer having thus shown how it is impossible to give a satisfactory answer to the question, What is a normal ovary? proceeds to discuss the "criteria of the laparotomist" who judges during an operation entirely by the "outward appearing." "A considerable increase (or decrease) in the size of the ovary, thickening of the cortex, and stroma, the presence of several cysts on its exterior—these are the common results which are alleged at the operating table in justification of its removal;" but for the facts and arguments adduced to show the absurdity of forming a hasty judgment on such data we must refer our readers to the original paper, only remarking that the writer makes out a very strong case, and that he is especially successful in his exposure of that scapegoat and unfailing excuse for operative interference, "early cystic and cirrhotic ovaries." In speaking of tubal disease Dr Coe says,—“Nothing is plainer than a plain case of pyo- or

hydro-salpinx when you hold the specimen in your hand. What I wish to analyze in the most searching manner are the diagnoses 'catarrhal salpingitis,' 'chronic catarrh,' 'beginning pyo-salpinx,' 'hypertrophy,' 'stenosis,' 'congestion,' 'enlargement,' 'dilatation,' 'œdema,' etc.—expressions which I have frequently heard in learned societies, where they passed without criticism. This multiplication of terms would seem to imply either that tubal disease is on the increase, or else that operators are becoming so acute that they can recognise the slightest deviations from the normal." But again we would refer those interested in the subject to the original paper, where they will find that, in regard to the tube, as in regard to the ovary, the writer makes out a strong case for the assumption that many of the high-sounding names that pass muster at societies as representing diseases of the tubes are products of the imagination of the operators, under the stimulus of having to justify their operations on pathological as well as on clinical grounds. In view, too, of recent proceedings in Liverpool, it will be interesting to read the criticisms offered by Dr Coe on the somewhat loose pathological descriptions of removed appendages given by Dr Imlach in his paper in the *Liverpool Medico-Chirurgical Journal*. No apology is necessary for giving the conclusion of this most practical and straightforward paper in full:—"If the frequency of disease of the appendages has been exaggerated, it is impossible to avoid the conclusion that these organs have been removed more often than the circumstances have seemed to justify. I believe that in the future the pain now referred to the ovaries and tubes will, especially when it is *constant* and is not limited to the periods, be explained more often by the presence of localized peritonitis, as well as neuralgia pure and simple. That either of these conditions is necessarily eliminated by extirpating the appendages I do not believe. There are not a few women now attending the various clinics in New York who have had their ovaries and tubes removed, and yet who complain of precisely the same pains as before; in fact, I can recall cases in which, although the menstrual disturbance is wanting, the pain is more severe than it was before. The one criticism upon the work of American laparotomists is this—they do not follow up sufficiently long the cases which they report as cured. A patient is not cured because she recovers from an operation. The operation was performed for a certain definite purpose, generally for the relief of pain. The question (and it should be the *burning* question) is: 'Has the pain been permanently relieved?' The man who can report twenty cases in which he knows that the patients are well, one, two, or six years after operation, is infinitely more of a benefactor than the surgeon who records a hundred so-called 'successful' cases, the after-history of which has not been followed beyond the period of actual convalescence. The sooner that surgeons learn to appreciate the fact that dysmenorrhea and pelvic pain are frequently due

to peritonitis, and *not* to disease of the uterus or its appendages, the less will they be disappointed at the persistence of these symptoms after removal of the appendages. Even if localized peritonitis was not present at the time of the operation, it may result from the same, and the patient may be left in a far worse condition than she was before. It is no unusual phenomenon to have a decided amelioration of the painful symptoms in cases in which it has been possible only to loosen the peritonitic adhesions around imprisoned appendages without removing them. The organs remain the same, but the environment is changed. So careful an observer as Martin states that, in all of the cases of oöphoritis that have come under his observation, there had long been marked inflammation in the adjacent peritoneum, and he adds emphatically, '*This appears to be the cause of an essential part of the troubles.*' In conclusion, the following deductions may be regarded as legitimate:—1. Ovarian disease is *not* as common as it has been represented; the surgeons, and *not* the pathologists, being responsible for the prevalence of the contrary opinion. 2. Because an ovary is partially diseased, it does not follow either that its functions have been materially impaired or that its removal is imperative. 3. The expressions 'cirrhosis' and 'cystic degeneration' commonly applied to the ovary are mischievous terms, which are too often used in justification of *unjustifiable* operations. 4. Actual disease of the tubes is far less frequent than is generally believed. Lesser degrees of inflammation, especially slight 'catarrhal salpingitis,' are seldom appreciable to the pathologist, still less to the surgeon. 5. Many of the symptoms ascribed to disease of the uterine appendages are really due to *localized peritonitis*, and will *not* be removed by a removal of the appendages. 6. The physiology of the ovaries and tubes is still imperfectly understood; their pathology must then remain *sub judice*, and operations for their removal, on the ground of limited disease alone, must be regarded as largely empirical. To which I would venture to add the prediction: 7. The present enthusiasm in this country in favour of Tait's operation will not endure, because it will eventually be discovered that the number of *permanent* cures is entirely out of proportion to the number of operations."

ON THE SO-CALLED LAPAROTOMY EPIDEMIC (Thomas More Madden, *The Dublin Journal of Medical Science*, July and August 1886).—In this paper the writer reviews the various conditions for which laparotomy is practised by the gynecologist from a clinical standpoint, and comes to much the same conclusion as does Dr Coe in the paper mentioned above from the pathologist's point of view. This seventh section, on the general aspects of the laparotomy question, we quote in full:—"In its moral, social, and economical aspects, as well as from a therapeutic point of view, the question of the increasing performance of operations for the removal

of the uterine appendages affords much matter for consideration. 'The *New York Medical Record* appears to think,' observes a recent writer in the *Medical Press and Circular* for 2nd June 1886, 'that the laparotomists need an apology, which it proceeds to deliver in the form of the following argumentative eulogium. We suppose the sceptics will be silenced thereby:—"The attempt of the New York Academy of Medicine to check the practice of spaying is evidently an ill-considered one, and is entirely antagonistic to the progressive instincts of the day. The history of the world shows that the practice in question has always been one of the crowning ornaments of the best types of civilisation, from the Chaldean to the Roman age. Now that, after many centuries of gloom, it is again brought into beneficent existence, its critics should beware of thoughtless and shallow opposition. The trouble probably lies in the fact that there still lingers an impression among crudely educated minds that the ovaries are organs of social necessity and economic importance. This, however, is a serious mistake. These organs are, it is true, useful for a short period in the existence of a portion of womankind for the perfunctory propagation of the race. Aside from this, however, they are not only of no service, but are a source of racial, domestic, and individual distresses of the greatest magnitude. Philosophers of the present day have ascertained several facts which place this view upon a solid and impregnable basis. No woman wants more than two children, many only one, and a large per cent, including all the unmarried, not any at all. But, in fact, the population is increasing at a seriously rapid rate, and the modern economist has had to revive and readopt the views of Malthus. In this exigency, when society's needs are antagonized by infant multiplicity, the laparotomist steps in, as a kind of modern saviour from the threatened polypædic catastrophe. The woman has her child, the ovary swells, the learned touch of the gynæcologist detects a pyo-salpinx, and in a twinkling out comes all the source of woman's labours and man's unsought paternities. The laparotomist is plainly society's best friend. Like all benefactors of the race, he must endure opposition and calumny for a time; but his noble work of radically removing the sources of over-population will go on, and we calculate that, at the present rate of increase, in fifty years some 35 per cent. of women will be permanently relieved of all the worry of maternal anticipation.'" Seriously speaking, the facts cannot be eliminated from consideration in this discussion that the ovaries are to women what the testes are to men, and that by their complete removal in either case the mutilated individual is thereby unsexed. New words will not alter old facts. And hence the more euphonious phrases by which the removal of the uterine appendages are now referred to, or the more scientific and successful method in which this is accomplished, do not render the ultimate consequences of operations for spaying, or castration of women, now less important than when

such operations were more rudely performed and more tersely, if less scientifically, described. These secondary consequences are, *inter alia*, to render those on whom such procedures have been completely carried out, by the removal of both ovaries or Fallopian tubes, incapable of fulfilling what in every Christian community has been generally recognised as one of the chief functions and primary objects of woman's married life—namely, that of childbearing. I have already expressed my belief in the occasional necessity of such operations as the only available means of saving life in certain exceptionally urgent cases. But I need hardly add that, in my opinion, even in these they should not be resorted to without absolute and well-proven necessity, or without the patient's concurrence and full knowledge of all their consequences. Moreover, in obtaining such consent, it should be borne in view, as Dr Wigglesworth has observed in the *Medical Press and Circular* for 24th February 1885, that there are 'two ways of putting the nature of an operation before patients. If women were only told that by removing their ovaries they became sterile, few in these days would object; but if they were told in addition that by this operation they were completely unsexed, that sexual desire became feebler, that in a few years their voices would change and become somewhat masculine, and that in time the face would become "hairy" like a man—in fact, that a change would ensue somewhat similar to that which takes place in the larger animals after spaying, not one woman in fifty would consent to the operation, except it became a matter of life or death.' It may perhaps be held that one who brings forward no statistics of his own to controvert the great amount of statistical evidence which has been elsewhere published to demonstrate the utility and safety of the free removal of the uterine appendages in large numbers of cases, is not entitled to question the expediency of adopting such operations generally. I cannot, however, acquiesce in this view, as I regard this subject as one to be considered on broad principles. I have not questioned either the accuracy of these statistics or the fact that the uterine appendages may be removed with as much safety by a skilful operator as might follow his removal of the mammary gland in a similarly large number of cases. But I do not see that such results, however successful, *per se* prove the general necessity or expediency of adopting such operations in other instances of the same kind without reference to the special circumstances of each individual case."

REMOVAL OF THE UTERINE APPENDAGES (J. Greig Smith, Surgeon to the Bristol Royal Infirmary, *The Bristol Medico-Chirurgical Journal*, May and June 1886).—In addition to its intrinsic merit, this paper will be particularly valuable to those interested in the subject treated of, owing to the very complete bibliography appended to it.

OCCASIONAL PERISCOPE OF DERMATOLOGY.

By W. ALLAN JAMIESON, M.D., F.R.C.P., Extra Physician for Diseases of the Skin, Edinburgh Royal Infirmary; Lecturer on Diseases of the Skin, Edinburgh School of Medicine.

A CASE OF TUBERCULAR INOCULATION IN AN INFANT.—Syphilis has frequently been conveyed by the process of sucking the wound in ritual circumcision, but the communication of tuberculosis in the same manner has been met with more rarely, and is less known. There are on record two cases observed by Lindmann and twelve by Lehmann, but without examination for bacilli. Elsenberg, a Polish doctor, relates the following:—A priest suffering from tubercle of the lungs and of the larynx, with bacilli in his sputum, had circumcised an infant. When seen, at the age of five months, the wound in the penis had become transformed into an ulcer, covered with a yellow and adherent deposit. There was a hard nodule in the prepuce near the foreskin. On both sides the inguinal glands were much swollen, and from an opening in the left side there escaped an opaque serous fluid, containing caseous particles. In the mastoid region in the right side was a large fluctuating abscess. The other lymphatic glands were unaltered. The child died of erysipelas and tetanus, after the removal of the caseating glands and the opening of the mastoid abscess. Numerous tubercle bacilli were found in the ulcerated prepuce and caseous lymphatic glands.—*Monatshefte für praktische Dermatologie*, No. 5, 1886.

ERYTHEMA MULTIFORME.—Villemin, taking his stand on the most recent observations, looks on erythema multiforme as a general disease, a variety of pyrexia, which occasions, besides the cutaneous lesions, visceral disorders, such as digestive derangements, affections of the serous membranes and heart, and alterations in the joints and tendons independent of rheumatism. In support of this opinion he makes use of another argument, drawn from the results furnished by a remedial agent. He has, in fact, proved that the iodide of potassium has a specific influence on the visceral and articular as well as the cutaneous manifestations of erythema multiforme; and that this can be invoked to prove the specific nature of the complaints. When the iodide has been given in doses of 30 grains daily, he has seen all the symptoms of the disease *simultaneously* modified in the space of twenty-four to forty-eight hours. "The temperature fell to 98°·6, the erythema grew pale, flattened, lost its induration, the pains vanished, the articular swellings disappeared, and in three or four days there was no longer a trace of the malady. The higher the fever the more marked the fall. When there were articular effusions and cedemas, such were not always instantaneously absorbed, because some days were needed to enable the extravasated fluids to re-enter the circulation. The disappearance

of the reddening, and the resolution of the nodosities, occurred with great rapidity, twenty-four hours sufficing to work extraordinary changes in these. The most recent papules and tubercles vanished first." Treatment by iodide does not prevent relapses, but these are arrested if the treatment is resumed during twenty-four or forty-eight hours. He relates eleven cases of erythema multiforme, in which the treatment by iodide of potassium gave results as stated above. (There was last week in Ward XXVIII., Royal Infirmary, under Dr Barbour's care, a case of erythema multiforme in a woman who had taken pretty full doses of iodide of potassium for three weeks before the eruption appeared. The distribution was somewhat unusual on the inner side of the thigh, the buttock, the shoulder, and forearm; but the lesions, which were extensive, were quite characteristically those of erythema. It was not noticed if there had been any rise of temperature. This case presents a rather remarkable commentary on Villemain's observations—W. A. J.) —*Gazette Hebdomadaire*, Nos. 22 and 23, 1886.

PSORIASIS SUPERVENING ON FRIGHT AND MENTAL EMOTION.—Among the occasional causes which seem to have a real influence on the production of psoriasis and in its recurrences authors have mentioned moral emotions. Heulz of Bourbole records five examples where, after being relatively long free from the complaint, it was reinduced shortly after a fright or intense anxiety. —*Annales de Dermatologie et de Syphiligraphie*, June 1886.

LANOLIN.—Dr Stern states the experience of this remedy obtained in Behrend's Poliklinik at Berlin. An useful ointment should possess certain properties. It should not be too rapidly absorbed. It must cling to the surface for some time, since there the pathological alterations are which are to be removed by its use. It should therefore stand between substances which are too quickly absorbed and those which are not absorbed at all. The official Unguentum Diachyli unites those peculiarities in a very perfect manner—for on the one part it permeates the epidermis, on the other it remains for a certain time on the surface. These render it specially suitable for the treatment of eczema. A modification of this ointment (Emplast. plumbi simp. lanolini, $\bar{a}\bar{a}$ 50·0; adipis, 10·0) is similar. One portion of that applied enters the skin, and maintains it soft and elastic, while another continues lying as a deposit on the surface. The parts of the skin coated with Unguentum diachyli c. lanolino show portions of salve still present after several days, and are maintained in an unctuous state by these. On suitable localities a daily application of this ointment is unnecessary. Several cases of eczema of the hands healed quickly when the salve spread on cloth was not changed oftener than once in three days. Two preparations have been used in seborrhœa capitis, a lanoline cream (Cetacei, 10·0; ol. olivæ, 30·0; lanolini, 40·0; aquæ, 50·0), and a lanoline pomade (lanolini, 50·0; ol.

theobromæ adipis, āā 5·0; tinct. benzoin, 3·0; ol. ætheriæ. ejusd. gutt. ij.) With these the scales disappeared with remarkable rapidity, but sufficient time had not elapsed to determine if the cure was permanent. In a case of psoriasis eruption too, after eight days' use of the lanoline cream the redness had much diminished, and the tendency to bleeding on scraping the patches had much lessened, and indeed such a marked improvement in the condition generally of the scalp had taken place as to raise hopes that the complaint might thus be quickly caused to disappear. A 5 per cent. chrysarobin lanolin salve, on the contrary, did not appear to exert a more favourable effect on the eruption of psoriasis than the simple one without lanoline; but the cases were too few to admit of positive statements. The special advantage of lanolin as a basis for ointments over those previously in use seems to be its long persistence on the surface of the skin, combined with its simultaneous retention in the epidermis.—*Deutsche Medizinische Wochenschrift*, No. 15, 1886.

THE BULLOUS FORM OF IODIC ERUPTION.—Morrow relates a most remarkable case of this rare cutaneous manifestation of the ingestion of iodide of potassium. There was incomplete paraplegia in a man aged 50, and for this iodide had been prescribed in doses of 30 grains thrice a day. There was no history of syphilis. Three or four days after the drug was begun, there was noticed an erythematous condition of the face, with the production of vesicopustules the size of a small pea. The dermatitis extended, and the vesicles became bullæ of varying size. When he had taken 900 grains in all in eleven days, the iodide was discontinued. Although the eruption eventually though slowly disappeared, the man died. The left heart was dilated, the mitral valve insufficient and atheromatous. The urine had been albuminous, and the kidneys were granular and contracted. An exhaustive analysis of nine cases recorded by different authors is given, and the following general conclusions are drawn:—1. The seat of predilection of the bullous form of iodic eruption is the face, neck, forearms, and hands; exceptionally it may occur in the trunk and lower extremities. 2. There seems to be no definite relation between the amount of the drug ingested and the production of the eruptive accidents. These may follow indifferently a slight, insignificant dose, or may appear only after the long-continued use of large doses. 3. In the former case the incidental effects of the drug upon the skin depend upon idiosyncrasy; in the latter class of cases the pathogenesis is more obscure. 4. The proneness of this eruption to develop in connexion with cardiac and renal disorders would seem to indicate that these disorders stand in the relation of a determining cause rather than a mere coincidence. 5. The practical inference may be drawn that caution should be observed in the administration of iodide of potassium when these complications are

found to exist. The eruption may be confounded with variola and syphilis. As Hutchinson has pointed out, the shot-like character of the papules, which precede the development of the bullæ, resemble those of the early stage of variola. The localization of the eruption, and the tendency to umbilication, are additional elements of confusion. The free exudation from the broken bullæ, with the admixture of blood, may form crusts not unlike those of syphilitic rupia. Hyde has suggested that the rare vesicular and bullous lesions, recorded as occurring in acquired syphilis, may have been induced by the administration of iodide of potassium for the relief of the disease."—*Journal of Cutaneous and Venereal Diseases*, April and May 1886.

CHRONIC ŒDEMA OF THE EYELID AND ECZEMA OF THE NOSE.—In one of the last meetings of the clinic of the St Louis Hospital in Paris, Dr Besnier spoke of the nature of certain chronic œdemas of the eyelids, especially of the lower lid, which come to resemble puffy cushions. The face also presents a certain amount of swelling. When the patient is first seen one naturally thinks of a renal affection, which the examination of the urine shows to be unfounded. Formerly these lesions were attributed to erysipelas, or rather to repeated attacks of lymphangitis; and, indeed, we sometimes observe inflammatory phenomena. The labours of Dr Vèrité have shown that the greater part of those chronic œdemas of the lids have a close connexion with chronic eczema of the nares. If this eczema is propagated in a downward direction it may cause fissures, and more especially a thickening of the upper lip, which is so often met with in strumous subjects. When, on the contrary, it spreads upward, it produces the œdematous infiltrations of the eyelids of which we have spoken. It must not be understood that eczema of the nares is the only lesion which can produce this condition, for it is also observed in lupus and syphilis of slow development which affect these parts. These varieties of eczema are of the most rebellious character. Dr Besnier advises a general treatment with cod liver oil in winter, and in other seasons arsenic, together with topical applications if necessary. Frequent sponging of the nares with tepid St Christian water is beneficial; or if this mineral water cannot be obtained, with tepid water containing from $7\frac{1}{2}$ to 15 grains of sulphate of copper in each quart. In the intervals of the sponging small pledgets of cotton should be introduced within the nares, spread with an ointment containing 150 grains of diachylon ointment to each 300 grains of vaseline or oil; or with an ointment made with 15 grains of yellow precipitate to each 300 grains of vaseline. Some cases of œdema of the lids are so marked that we should make punctures at the most tumified points with the finest Paquelin thermo-cautery. By this treatment the swelling is reduced with much greater rapidity.—*Journal of Cutaneous and Venereal Diseases*, August 1886.

SURGICAL PERISCOPE.

By A. G. MILLER, F.R.C.S.E.

CASE OF COMPOUND COMMINUTED FRACTURE OF SKULL; HERNIA CEREBRI; ABSCESS; RECOVERY.—Dr W. Odillo Maher, of Sydney, reports in the *Australasian Medical Gazette* for Dec. 1885 a most remarkable and interesting case of head injury, which we will give as shortly as possible. F. M., æt. 4½, fell off a balcony 12 feet on to asphalt. Unconscious when taken up; vomited blood; bleeding from nose; small lacerated wound on right frontal eminence; fracture of frontal bone; brain substance between edges of bone; wound dressed with iodoform and wool; mercurial purge ordered, head shaved, and ice applied; during night convulsions affecting left side mainly; patient semi-unconscious for three days, and occasionally showing symptoms of irritation; wound discharged offensive matter for a few days, then healed; at the end of a week seemed nearly well; but fourteen days after the injury vomiting occurred, followed by convulsions and high temperature. Condition on admission to hospital—Thin, pale, weak, peevish, irritable, restless; lies doubled up in bed; scar on right frontal region, with sinus, from which a small quantity of pus exudes; bare bone distinctly felt. Under an anæsthetic a free crucial incision was made over the seat of injury. A triangular piece of loose depressed bone was removed, permitting the escape of about a drachm of foetid pus. Dura mater thickened, but apparently uninjured. Parts thoroughly washed with carbolic lotion (1 to 20), and dressed with carbolized gauze. Hernia cerebri appeared on third day after operation. Next day child was anæsthetized and the wound enlarged, when another piece of dead bone was discovered and removed. The flaps of skin were stitched over the hernia to repress it. Child somewhat better. After this the child did well, and was discharged two months after the injury apparently quite well, but with a sinus still remaining, which discharged some pus. On 1st August, five months after the injury, the child had an attack of convulsions affecting the left side. The face most marked, and the upper more than the lower extremity. She was at once removed to the hospital. Under an anæsthetic a fine silver probe was easily passed straight into the brain substance for about an inch. It was withdrawn quite black. A grooved director was then passed in the same manner, when a gush of very foetid pus took place. The opening was carefully enlarged, the abscess cavity washed out with 1 to 40 carbolic lotion, a drainage tube inserted and left in. The direction of the sinus was downwards, backwards, and inwards. The drainage tube was filled with carbolic lotion, which was seen to rise and fall with each pulsation of the brain. After the operation there was left-sided hemiplegia. Six hours after this the child had regained consciousness, and next day

the hemiplegia had disappeared. The abscess was washed out daily through the drainage tube, which was shortened on the ninth and taken out on the fourteenth day. Patient was discharged perfectly well five weeks after the opening of the abscess. One month after discharge she was in her usual health.

UNUNITED FRACTURE OF OLECRANON; FRAGMENTS WIRED; RECOVERY, WITH COMPLETE USE OF ARM.—The above operation was performed at the Prince Alfred Hospital, Sydney, by Alexander MacCormick, M.B. et Ch.M. Edin., Hon. Assistant-Surgeon to the Hospital. The following simple account is given in the *Australasian Medical Gazette* for Dec. 1885:—"Under the influence of ether, and with strict Listerian precautions, a longitudinal incision was made over the olecranon down to the bone, which incision at once opened into the joint. With a gouge the organized lymph was removed from the ends of the fragments; these were then drilled obliquely and wired together with strong silver wire; the twisted ends of the wire were hammered flush with the periosteum. A catgut drain was passed into the joint, the wound closed, and the arm placed in a splint in the extended position." Union took place at once, and without any suppuration, the highest temperature recorded being 99°. The dressings were changed only four times. "Passive motion was begun three weeks after the operation, and in four weeks more the patient was discharged with perfect power of extension and of flexion at the elbow."

PENETRATING WOUNDS OF THE ABDOMEN.—Abdominal surgery, especially from what we may call the war aspect, has occupied the attention of societies and the columns of journals very largely of late in America and elsewhere. We have frequently given abstracts of papers and discussions. In the present instance we notice a paper read before the "Military Tract Medical Society" of America in November last by Dr S. M. Hamilton, of Monmouth, Ill., and published in the *Journal of the American Medical Association* for 23rd Jan. 1886. The object of the paper is to draw attention to the importance of opening the abdomen in the mesial line, and "thoroughly cleansing the peritoneal sac of all blood clots and irritating material" in every instance in which perforation of the bowel or serious hæmorrhage exists. Of course diagnosis is of the greatest importance. To guide the surgeon under circumstances in which he has to make up his mind without any delay, Dr Hamilton mentions the results of his own experience. He considers that profound shock gives reliable evidence of the existence of a grave injury probably requiring laparotomy. What the exact symptoms are that indicate perforation of the bowel, he says, are not easy to describe for another's guidance, but he mentions shock, vomiting, pain, meteorism rapidly developed, fæculent matter or odour at the external wound, and early peritonitis. He relies most on the rapidly developed meteorism in otherwise doubtful cases. Assistance may be got from the nature of the

weapon or missile which inflicts the injury. Bayonet wounds are not so dangerous as those inflicted with sharp instruments. In the former "the tissues are not cut, but separated, have a tendency to spring back into place on the withdrawal of the instrument, and close up the wound of entrance." Small missiles, such as bird shot, may "penetrate the bowel, and the punctures close up at once, like the wound of a hypodermic needle, and give but little trouble." Round musket balls may "traverse the belly from front to rear, or from side to side, without wounding the intestine or seriously injuring any other of the important viscera." In the matter of treatment Dr Hamilton recommends opium, starvation, and laparotomy. His special views with regard to the last are that "the incision should be central without reference to the external wound, and large enough to expose the entire cavity to the closest inspection, so that every wound shall be discerned and secured, all hæmorrhage controlled, and, above all, a thorough cleansing of the peritoneal sac" made possible. He repeats, "everything for the safety of the patient should be done in the most thorough manner possible." Dr Hamilton's concluding remarks are hardly in accordance with the words last quoted. He speaks of "Listerism" as "merely a habit, a fashion," and "noisy pother;" yet he uses some of the "Listerian" precautions in regard to sponges, hands, and instruments. But if there is anything in "Listerism," we think it should be employed "in the most thorough manner possible" in the interests of the patient.

THE ETIOLOGY OF RACHITIS.—Dr H. C. Haven, of Boston, in recording the histories of seventy-five cases that occurred at the Dispensary for Children during three years, states that feeding and hygienic surroundings seemed to have no influence. He found, however, a marked preponderance of rickets among coloured children, and those coming from southern Europe. His explanation is this:—"The only hypothesis I can suggest to myself to account for the relative frequency of rachitics in the coloured race is, that as their natural habitation is much farther south than North America, the effect of the climatic conditions, which are recognised as having a causative effect in rachitics, is exaggerated; the purer the African blood, the more will the effect be noticed. In other words, there is an inherited necessity for heat and sun which our climate does not satisfy, and rickets results. It is striking in this connexion to notice that of the white rachitics of a foreign ancestry, the majority are born of parents coming from the south of Europe, where the disease is relatively rare, rather than of parents from England and North Germany, where the disease is rife." In a discussion which followed the reading of Dr Haven's paper before the Suffolk District Medical Society, Dr Rotch suggested as another explanation that in his experience syphilis was more common among coloured people than among whites.—*Journal of the American Medical Association*, 23rd Jan. 1886.

ANTISEPTIC DRESSING IN THE FIELD.—"Dr Bedoin, principal medical officer at Vincennes, proposes that all wet or moist dressings should be rejected, as well as pulverulent dressings, as being impossible to be properly applied, and recommends the employment of tissues previously impregnated with some antiseptic substance, such, for instance, as ungummed filtering paper, gauze, lint, or jute, as being the most inexpensive. These tissues are steeped in a solution of carbolic acid, boric acid, or of corrosive sublimate, then dried. The dressing consists in the direct application of these leaves on the wound, the whole being covered with layers of gutta-percha and fastened with a bandage. The tissues thus prepared are inexpensive, very light, and not bulky. By this means the asepticity of the wound is ensured, and it permits of the employment of the more classical antiseptic dressing when once the soldier has reached his permanent ambulance. Some of these leaves may be arranged under his cuffs, and the sick-bearers may be supplied with a few packets of them, which they may apply themselves."—*From the Paris Letter in the Journal of the American Medical Association*, 23d January 1886.

HYDROCELE OF HERNIA SAC.—Dr Thomas E. M'Ardle and Dr Louis Kolipinski, of Washington, have published, in the *Philadelphia Medical News* for 9th January 1886, an interesting and valuable paper containing a list of twenty-nine cases which they have extracted from the books to which they had access in the library of the Surgeon-General's Office, United States Army. The first case they record is that published by Le Drau in 1740. Drs M'Ardle and Kolipinski remark on these cases under the following heads:—1. *Pathological Anatomy.*—Hydrocele of a hernial sac, or "*hydrops sacci herniosi*," "may occur at the same time as a rupture, after the formation of the hernia, or in an old sac in which there is no hernia." The opening communicating with the peritoneal cavity is closed by adhesions, with bowel or omentum retained in the neck, more frequently the latter, or without any such complication. Some injury or irritation then causes inflammation and serous effusion. 2. *Etiology.*—Contusions, falls, sudden efforts, badly fitting trusses retained over descended ruptures. 3. *Symptoms.*—The presence of a fluctuating, more or less translucent tumour, slowly accumulating if chronic, and having been preceded by a hernia. If acute the swelling will be accompanied by heat, pain, redness, etc., and there may be some symptoms resembling those of strangulation. 4. *Diagnosis* should not be difficult. This affection differs from ordinary hydrocele of the tunica vaginalis in its history and position of the testicle. Hydrocele of the cord and undescended testis should not give rise to any difficulty. In one case which the writer saw several years ago, the condition was mistaken by those who saw it first for strangulation on account of the obstinate sickness which was present. Hernia had existed for many years, but had not been

"down" for some time. The irritation of an old hard spring truss and severe exercise had produced inflammation and effusion into the sac. The distension by clear fluid was made out, the fluid removed by trocar and canula, and a cure resulted without further treatment. 4. *Treatment*.—This has been various. Tapping without and with injections, incision, and excision, were practised by the older writers. In more modern times local applications, such as leeches, cold, blisters, etc., have been tried first, combined with rest and pressure. This more cautious method of treatment has arisen from the fear of the presence of a portion of bowel in the sac as well as the fluid. Such a possible condition must always be taken into consideration. 5. *Prognosis* is favourable if the right treatment be adopted.

Part Fifth.

OBITUARY.

WE have to regret the death of JAMES DENHOLM PRIDIE, M.R.C.S. Eng., etc., formerly of Stockton-on-Tees, which took place at Edinburgh on the 11th ult.

JAMES DUNSMURE, M.D., F.R.C.S. Ed.

THE medical profession in Edinburgh has lost a much respected member, and the Royal College of Surgeons the fifth, in order of seniority, of its Fellows, by the death of this estimable gentleman, which took place at his residence in Queen Street on the 15th October. James Dunsmore was the third son of Mr James Dunsmore, who was for a long time the Secretary of the old Fisheries Board of Scotland. He was born in 1814, and was thus seventy-two at the time of his death. Having received his elementary education at the High School, he entered the University of Edinburgh as a student of medicine; and according to the then prevailing custom served an apprenticeship with Robert Liston. He took the degree of M.D. and the license of the Royal College of Surgeons in 1835. He acted in the Royal Infirmary as a resident, both in the Surgical and Medical Departments, and thereafter went for a while to study on the Continent. On his return to Edinburgh he was the assistant of John Lizars, Professor of Surgery to the Royal College of Surgeons, under whom he saw a large amount of the practice of surgery; and it was doubtless owing to his connexion with Liston and Lizars that he acquired that predilection for the Surgical Department of the profession which he maintained through his life. He became by examination a Fellow of the Royal College of Surgeons in 1841, and with great acceptance filled the Presidential Chair in the years 1866-67. He was for a length of time an examiner in the College of Surgeons, and

co-examiner in surgery at the University. He was one of the surgeons of the Royal Infirmary, and when he had completed his full term of active service he received from the residents and dressers in his Wards an expression of their regard for him as a surgeon and a gentleman in the form of a testimonial in silver plate. Dr Dunsmure held several other professional appointments in Edinburgh. He was a Fellow of the Royal Society of Edinburgh. He has left four sons, the eldest of whom—Dr James Dunsmure, junior—is a Fellow of the Royal College of Surgeons of Edinburgh.

Outside of his profession Dr Dunsmure was known as an attached member of the Church of Scotland. He was for about forty years an elder in St Andrew's Church, and a Director of the Society for Propagating Christian Knowledge, as well as other religious and philanthropic institutions.

Dr Dunsmure's characteristics as a professional man were a cautious but correct diagnosis, securely based upon sound principles; he was not fond of the knife; he was not what it is the fashion to call a showy operator, but he did his operative work with deliberation and care, and with the result of obtaining the object which he had in view. As an examiner on a subject eminently practical, he sought to bring out from candidates their capacity for entering on the duties of their profession, seeking rather to learn what they did than what they did not know. His kindly bearing and encouraging manner were thoroughly appreciated by candidates, and they respected him accordingly.

As a man his characteristics were sterling integrity, straightforwardness, and a geniality of manner which made him a universal favourite. He had many friendships, and he retained them all,—some of them, as in the case of the writer of these lines, dating back to the days of their boyhood. He was an esteemed "Æsculapian," which to every one at all acquainted with the social habits of the medical profession in Edinburgh, means that he was one who thoroughly enjoyed the fraternal intimacy of his professional brethren. He was a kind and genial host, not seeking the display of a great amphytrion, but rejoicing to have six or eight friends at his table to enjoy free and unrestricted social mirth. We have known him to convene one of his pleasant little dinner parties for the sole purpose of having after dinner a song which consisted entirely of good-humoured raillery directed against himself.

James Dunsmure was not an athlete in the muscular sense of the word, but he was one of those who recognised the importance to a professional man having some distraction, as the French say, amidst his medical labours and anxieties. He was an ardent sportsman, and could use his gun excellently, though without any pretensions to being a crack shot. He was a much appreciated member of the Royal Company of Archers, the Queen's Body Guard for Scotland, and handled his bow so dexterously as to be a frequent prize-winner.

His active habits, light frame, and a certain freshness of complexion which he retained till within the last year, made all his friends unprepared to hear that he was affected with mortal disease, which, however, speedily showed itself in his altered appearance. Three years ago he had a severe attack of sciatica from which he quite recovered, but about twelve months ago he began to complain of dyspeptic symptoms, and when he was examined by a medical friend, whom he was accustomed to consult as to his ailments, the diagnosis was made of a malignant tumour in the omentum. This unhappily proved true; it gradually invaded the stomach, and ultimately assumed the form of general carcinoma of the peritoneum. He suffered much, but bore what was allotted to him with the uncomplaining fortitude of a brave man and the pious resignation of a sincere Christian. One of his last doings was to give a lesson which may be profitably pondered by those who make objections to the post-mortem examination of deceased relatives. Though there was no doubt in the minds of his medical advisers, or in his own, as to the nature of his fatal malady, he begged that his body might be examined. This could not be done in his own house, because by a distressing coincidence his daughter-in-law was delivered of a daughter just three hours before he died, but it was carried out in the mortuary of the Royal Infirmary, and the diagnosis amply confirmed.

His funeral took place on the 20th October, the cortège starting from St Andrew's Church, of which he had so long been an elder. It was attended by all his brethren of the Kirk-Session, by a numerous retinue of his professional friends, and by many male and female members of the laity who had learned to esteem him as a professional adviser or personal friend. The service in the church was conducted by the parish minister, the Rev. Dr Stewart, and that at the grave by the Rev. Mr Mitford Mitchell of Aberdeen, a nephew of the deceased. During the impressive service in the church, a thrill of additional sorrow was sent through the hearts of all present by the allusion made by Dr Stewart to a calamity which was impending on the family of the departed. Every one realized too truly that this pointed to the perilous condition of the daughter-in-law. This solemn augury has been too sadly fulfilled by her death on the 21st inst., and few things of late have evoked a deeper feeling of sorrow alike in medical and professional circles than this conjunction of bereavements, which within a few days has deprived Dr Dunsmure, jun., of a revered parent and a beloved wife.

J. SAMPSON GAMGEE, OF BIRMINGHAM.

On the evening of Saturday, 18th September, Mr J. Sampson Gamgee died at his residence, Broad Street, Birmingham, in his fifty-ninth year, from uremic poisoning, the result of chronic

kidney disease, accelerated by a recent fracture of the femur sustained a few weeks ago.

Mr Gamgee was born, we believe, at Florence in 1828, and he received his earliest professional education in Italy, and afterwards at Paris, and the many years spent on the Continent made him a most accomplished linguist. As a young man he came to London, and entered at University College, where he achieved distinction and gained the Liston Prize in 1853 for an essay on the "Starched Apparatus for the Treatment of Fractures." He was contemporary with Sir Joseph Lister, Sir Henry Thompson, B. W. Richardson, Richard Quain, and Christopher Heath. He was admitted a Member of the Royal College of Surgeons, England, in 1854, and later he became a Fellow of the Royal Society of Edinburgh. For a short period Mr Gamgee was House Surgeon at University College Hospital, which he left to volunteer for service in the Crimean War, where he obtained a great knowledge of gun-shot wounds. At the end of the war Mr Gamgee returned to London, and was appointed Assistant Surgeon at the Royal Free Hospital. In 1857, after a severe competition, he was elected one of the Honorary Surgeons to the Queen's Hospital, Birmingham, and retained that position until eight years ago, when he retired from active work at the Hospital, and was nominated one of the Consulting Surgeons, a position he held at the time of his death.

Mr Gamgee was a brilliant writer, a powerful speaker, and a master of the art of conversation. For upwards of thirty years he was a constant correspondent of the *Lancet* on Surgical and other topics, and it may be mentioned that when he awoke on Saturday morning last, the first thing he asked for was this week's *Lancet*.

Amongst some of Mr Gamgee's best known publications are an essay on the "Starched Apparatus in the Treatment of Fractures of the Limbs," which gained the Liston Prize (1853). In 1854 he published a work on Researches in Pathological and Clinical Surgery. In 1865 an annotation on a successful case of Amputation at the Hip Joint obtained for him the distinction of election as Foreign Corresponding Member of the Society of Surgeons in Paris. In 1871 he issued a volume on the Treatment of Fractures of the Limbs, and in 1878 another on the Treatment of Wounds, "Vivisection and Human Surgery," and many historical and biographical essays, the most important of which may be considered an essay on Harvey and Cæsalpinus, the two rival discoverers of the physiology of the circulation of the blood. He was also one of the main teachers of the system of the dry and infrequent dressing of wounds, and by his publications and inventions in this direction he made for himself a wide-reaching reputation.

The remains of the late Mr J. Sampson Gamgee were interred on September 22nd in Handsworth Old Church burial-ground, with manifold marks of respect and sorrow, and the funeral was attended by a considerable number of the medical profession in Birmingham.

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ORIGINAL COMMUNICATIONS.

I.—INAUGURAL ADDRESS TO THE WOLVERHAMPTON MEDICAL SOCIETY, OCTOBER 7, 1886.

By LAWSON TAIT, F.R.C.S. Ed. and Eng., M.D. (Hon.), President of the British Gynæcological Society, President-elect of the Birmingham Branch of the British Medical Association.

MR PRESIDENT AND GENTLEMEN,—The request to deliver this address was a compliment I could not decline, for the great majority of those whose names are inscribed in the list of your Society are men whose friendship I have been privileged to possess for many years, and to very many of them I am indebted for acts of kindness in my earlier years for which I have always been grateful, and of which I shall continue a lasting remembrance.

If I had declined to appear before you there could have been only one excuse, and I might have fairly urged that the subjects for inaugural addresses have long since been worn threadbare—nothing remains, not even in abdominal surgery, that I could present in a new aspect. About that interesting subject I am now occupied by repeating week after week what I have said years ago to my neighbours here, and they know all about it. Therefore I had to cast about for something to say, and I was reminded how often, in my days of struggles, I had wished that in my student days we had been lectured to on such a subject as the “Exercise of Common Sense in the Practice of Medicine,” and how much it would have helped me, far more than prelections on molecular pathology, or cellular dynamics, or even the special peculiarities of our more modern friend, the omnipotent germ.

The “Exercise of Common Sense” may sound a queer title for an inaugural address to a learned Society, but I wish I knew better how to tell you how to get the sense. I wish I knew better how to exercise it, then I could tell you of greater success, fewer disappointments, fewer misunderstandings, and I could make you all, as well as myself, better practitioners, more contented with your lot and far happier with one another.

Common sense is very difficult to define. It has been decided to be the most uncommon of all the senses, and that perhaps is a

definition as easy as any, and more deserved than most. I take it to be that rare attribute of our reasoning power when we are able to discuss and decide a question without giving to any argument an undue weight by reason of prejudice or selfish consideration. A man of "strongest common sense," as we say colloquially, is a man as nearly as possible free from prejudice, and as consideration of self is always the strongest form of prejudice, he must of necessity be of the least selfish form of humanity. The "Exercise of Common Sense in the Practice of Medicine" comes, therefore, very much to be the exercise of that altruism which, by all the higher forms of religion which have been presented to the world, particularly those of Buddha and Christ, has ever been placed as the very highest phase of human life. Indeed, the great *nirvana* of the former religion is but the peaceful and absolute negation of self, the subjugation of all consideration of self, and not the mere annihilation of being, as is vulgarly supposed by those who are unfamiliar with the tenets of the great Oriental moralist.

From this point of view we can easily understand how common sense is the rarest of the senses, how difficult it is to cultivate, and how great the result must be for the man who has a well-deserved reputation for its possession. As with a man so with a body of men, and very largely on this point does humanity judge those who are banded together in various subdivisions of the lines of life, as professions, corporations, or other methods by which are accomplished the multitudinous objects with which we are concerned.

The world loves dearly to have its jest at such bodies, and the jesting reproof carries with it often a very wholesome correction and check on the tendency to the development of self which is inevitable in combinations when the individual responsibility is sunk in a conjugate responsibility. The infamous proceedings of some rascally attorney in robbing the widow and orphan, in destroying the trust of a too-confiding client, is, by the light of the stage, the scheme of the novelist, or the byword of gossip, made to appear as a character for the legal profession, not as what is deserved, but more as a warning as to the direction in which the body as a whole must exercise its common sense, and by the will and upright conduct of its vast majority check and defeat the evils of those within its ranks whose sole or chief object is self. Such criticisms are preventive surely and wholesome, and therefore no line of life should be freed from them, from the occupants of thrones downwards. The duty of each body is to exercise a frequent self-examination to know how far such aspersions are deserved. If not deserved at all, they are not only harmless but are really beneficial. If deserved, then they call for immediate remedy.

In our own profession such criticisms are frequent enough, and in some individual cases they are unfortunately found to be deserved. These instances become, therefore, the beacons from which

we must take our bearings, and make our observations by that best of all instruments, our common sense. The standing joke against us is that we kill our patients, and occasionally we really do. History records a goodly number of murders against members of our profession, dastards who have taken advantage of their trusted position to administer poison in the shape of drugs. Their profession has been speedily avenged on them, however, for if it had not been for Christison we could not have hanged Palmer, and but for MacLagan and Littlejohn, Pritchard would have escaped. Further, it must be borne in mind that it really is by the labours of our profession that every criminal is brought to the rope, for not a murder trial could come to a conclusion satisfactory to the ends of justice but for the knowledge which we have, and which we bring freely to bear on the grave issues submitted to the jury. When such an instance, unfortunately, does occur, and we have to use our terrible weapons against one of our own craft, we mourn because a brother has fallen, but we pursue him as relentlessly, we detect the poison with as much skill and with as unremitting care as if he were one for whom we were far less concerned. In fact, as a body in such a case we subject all considerations of self to the establishment of the higher interests of others, of the whole community. It is, indeed, the exercise of common sense, this denial of self, for if we knew not that our very readiness to sacrifice our brother as an example, our very eagerness to purge our craft of his crime, was the surest road to public confidence, we might be led to shelter him, to aid him, at least, by securing negative results. The result is that, as a body, no set of men have such complete hold of public confidence as the members of the medical profession; for no matter what the jokes may be against the doctors, no man, woman, or child but has "his doctor," sometimes half a dozen, upon whom speedy demand is made in time of trouble.

I am sure this absolute confidence is not misplaced in the medical profession, and very many reasons may be urged for its justification were such demanded. We cannot claim that medicine is an exact science, but nothing save pure mathematics can be claimed as exact, and it is the boast of the mathematician that pure mathematics never can be of any use to anybody. But medicine is scientific so far as this, that it represents always and to the full the best application possible of all human knowledge to the prevention and relief of human suffering. Just as our jurisprudence is imperfect, so is the art of medicine incomplete. Just as lawyers proverbially differ in their interpretation of an Act of Parliament, so do doctors differ in their views concerning the nature of diseases, and in the methods of prevention and treatment. Those very differences are the methods by which progress is made, and so long as criticism is made on the basis of common sense, nothing but good can come out of its exercise.

As a body I feel confident that we exercise such criticism in a wholesome way, that in every one of the numerous phases of the exercise of our art we have but one scheme of action, and that is the welfare of our race. I have all through my professional life felt that those terms of praise about our craft, that it is honourable and self-sacrificing, are entirely deserved. I have even been able to feel many times that we deserved to rank as a noble profession, a term which has been ascribed to us by the highest authority. There are none who exercise the daily functions of medical practice but carry their lives in their hands, and we do it without the exciting aid of trumpet call and cannon smoke; we do it without the stimulus of the bubble ambition, or the speedy and almost painless death from a rifle ball. When we get a duty call from death we get it through the poisoned finger or the lingering pestilence, and we die in weary agony and without the hero's chaplet. Yet there is never a lack in filling the death vacancy. Day by day we are associated with poverty and misery and death, but most of us die in harness, battling to the end with the unhappiness of all around us, and with the poverty which is the lot of ninety per cent. of our profession.

This has all been said before, and said in better fashion than I can coin words for; but there is one merit belonging to my brethren, inherent in their pride of craft from time immemorial, upon which I have never heard a word to their credit, and yet I have never heard of any body of men of whom the same could be asserted. We are placed on every hand, and with almost everybody, in such relations that we know facts and can formulate conclusions which put large numbers of our clients hopelessly in our power. But I have yet to be informed of one of our body having been convicted, or even accused, of using such information, of so abusing confidence, for the purpose of plunder.

This leads me up to a conclusion I have already indicated, that as a profession we are strongly imbued with that principle of denial of self, which I construe for my present purpose into the exercise of common sense, and that it is upon this sure foundation that our position in public confidence is based.

There must be some here—perhaps there are many—who were privileged to listen, as boys, to the words of wisdom which used to fall, in epigrammatic form, terse and clear, difficult to forget, from the lips of James Syme. Occasionally he would leave the realm over which he reigned supreme—Clinical Surgery—and briefly address us on other points. He was not eloquent, in fact he was a very bad speaker, but what he did say was always food for thought. He would say, for instance, that there was only one way to fill your consulting-room, and that was to get every patient you could who came to see you to send two others. To persuade them effectually to this policy the only way was to cure them, and the quicker you cured them the more certainly would they send the

other two. And then, with his deft and beautiful little hands, he showed how his marvellous cures were effected. He would tell us, further, how three roads might be chosen by candidates for the confidence of the public, but how that only one could be successful—how three interests had to be regarded, and how one of them had to be kept subservient to the others. They were the interest of the patient, the interest of our profession, and the interest of our individual selves. The latter was to be kept always behind the other two; and here Syme taught self-subjugation—common sense.

In our individual lives it is far more easy to see our defects than when we view our actions as a profession; and though one might expect that our united action was a mere expression of average motive—that is to say, that the average quality tension of common sense in the individual world be expressed in the resultant action of the whole—I fear it is not so; I wish it were. But there can be no doubt that men in deliberate and responsible association cannot be led astray by evil suggestions as easily as they would if acting separately, and that in united action the higher tendencies of some infallibly act beneficially on others to raise their tone. When there is professional discipline these tendencies are increased, and in our ranks professional discipline has been carried further than in any other body with which I am acquainted; so fully, indeed, that it is absolutely unknown that one of us has been asked to visit the plague-stricken and has refused from want of professional courage. The professional disciplines of both soldier and sailor are known to fail both in collective and in individual examples, but I have yet to learn that medical discipline has ever broken down, not even amongst its rawest levies. I remember in my youth a perfect holocaust of house surgeons and physicians in the infirmaries of Dundee, Greenock, and Edinburgh from typhus. I think eleven of our young graduates were lost in one year, besides many, like myself, who fell wounded, but not unto death. But there was not a boy in the whole list who was not ready to take his chance as the terrible vacancies occurred. Yet all these men would probably form a mere mob in any emergency having relations outside the lines of their professional discipline.

The question of how much we differ in our collective lines from the life we lead as items is a very curious one, and, so far as I have seen, has not been studied. We imagine that collective results are but averages of individual existences, but they are clearly not so, and the two sets of relations must be studied apart. I wish I could think that we had as much common sense, in proportion, in our individual relations as we certainly have in our existence as a profession. I wish we followed Syme's maxims more strenuously, and endeavoured to subjugate self to the general welfare more completely, particularly in our relations to one another. In our relations to our patients, putting aside errors of judgment, I do

not think there is much to complain of. The British public is strongly impressed with the belief that the doctor who attends him ought to know everything, to possess the skill and address of a Court physician, the intrepidity and dexterity of an operating surgeon, the sleeplessness of an engine-driver, and the patience of Job, and that all this should be at his service for half-a-crown a visit, and I am bound to say he very often gets a great deal of it for that very small sum. When he does not, or when he fancies he finds a failure, there is a great row. Complaints of neglect and want of proper knowledge are scattered broadcast behind the poor doctor's back, much to his detriment.

The stories I could tell of this most unreasonable tendency on the part of the British public are endless. A lady has told her doctor that she is pregnant, and wishes him to attend her about a certain fixed date. She does not ask him to examine her, and he does not offer to, as she would probably resent the aspersion on her matronly knowledge. But she is not pregnant, and comes to me to learn that she has a big ovarian tumour. She is furious with her doctor, "because he ought to have known, and not let her make such an exhibition of herself getting everything ready," and she will have nothing more to do with her doctor. I then worm out of her cautiously, after the operation, the real facts of the case, and show her the blame is her own really. She gets ashamed of it, and makes a tardy reparation and apology. Or, perhaps, her doctor has really mistaken an ovarian tumour for pregnancy. Then my difficulties are great. But as I never attempt to tackle such a difficulty till the time of convalescence, when I have gained the patient's confidence, and have her in such a state that she must listen and cannot be fortified in her wrath by sympathizing gossips, I talk to her thus,—“I see, madam, you wear a pretty diamond ring; I suppose you are a good judge of diamonds.” “Oh, no,” she answers, “I know nothing of diamonds.” “Dear me! I thought, as you wore that, and have probably purchased it some time ago and worn it constantly, you would have known all about them. How much did it cost?” “It cost sixty guineas.” “Are you sure it is real?” “Of course; I would not have paid sixty guineas for it if it had not been real.” “Then, madam, I must tell you that you are a most unreasonable woman. You have worn that ring all this time, and have no more guarantee of its genuineness than the receipted bill you got with it. How can you blame Dr Smith for his mistake in your case? He has had far less experience in ovarian tumours than you have had with diamonds, and all the guarantee of his accuracy which you thought it worth while to effect was the pitiful half-crown which his examination cost. He can no more be expected to understand completely things which are rarely if ever under his observation and to judge of these immaculately than you can be expected to know all about diamonds because you possess one.” Such a train of reasoning

always brings her to her senses, and a reconciliation with her doctor is effected.

In our individual relations with the public, the public, as I have said, expect each man, certainly each general practitioner, to know everything, and we all know how impossible, in these days of constantly increasing victories in medicine and surgery, it is for any one man to be conversant, even to the extent of fair efficiency, with all the departments of our art. The division of labour is inevitable, and it is also advantageous to everybody concerned. Yet it is precisely on this point that our defective instincts or selfish prejudices are constantly calling out. We have perennial discussions in the medical journals, furious outbursts of correspondence on the question of "consultants and general practitioners." There is always the same sort of thing said on the two sides, and the whole proceeding is eminently discreditable to those who take part in it.

If we could only lay to heart Syme's saying that the first thing we have to consider is our patient's interest, and the next the interest of the art we practise, if we could sink all considerations of self before the precedent interests, if, in fact, we could exercise common sense, we should exalt ourselves individually as well as collectively.

The offences we commit in this direction are of the worst kind in our youth. As we get older we get wiser; only I think in this matter old age is always inclined to hold its tongue from very shame at the follies of its youth, and therefore youth does not stand as fair a chance of improvement as it ought to have. For myself, I am not yet in old age, hardly yet in the full prime of life, yet my fate has been such that I have been for some years in a place which men rarely reach while their hair is still unsilvered. Therefore, with the full ripeness of recollection of the offences of my youth, and the regretful feelings engendered by them, I can feel alike with those still engaged in them, and I can speak fully from the point of view which experience gives, and still more from that given by that period of life when the bitterness of the struggle for existence is past.

Two cardinal mistakes are made by all of us in starting the race of the life medical. I don't think any of us are free from them. The sooner they get corrected the happier we shall be, and I raise my warning voice about them with the greater earnestness, now that I see with advancing education, with larger numbers entering my profession, the struggle for mere life will be keener than it has ever been. The first mistake is the tendency to look upon every patient who consults us as something in addition to our goods and chattels, something in which from that moment we have a proprietary right, inalienable and freehold. When patients are few and fees uncertain, during the time we sit and sit, and wait and wait, till we are nearly crazy for the bell to ring with another fee, this sort of view is natural enough—we would like to establish it.

In our belief that we have these rights we do many foolish, I would almost say wicked, things. Let me tell a little story of my own folly, and let every one of you think over your own lives and see how often you could match it.

Many years ago, long before it ever seemed to me possible to make a success of the speciality which I now practise, I was called on an emergency to see a gentleman of considerable social importance in the suburbs of Birmingham, in which I then lived. It was not difficult to see that the patient was in the first stage of an attack of typhoid fever, and when I was asked for my opinion I gave this as the conclusion at which I had arrived. The patient and the inhabitants of the house in which he was residing parted from me in the most friendly way, and I congratulated myself on having at least one patient to look after for the next six or seven weeks. I had arranged to pay an evening visit, when, greatly to my horror, I received a very polite note enclosing a fee of 10s. 6d., with a statement to the effect that after the opinion I had given the patient and his friends had determined that Dr — should attend him. Now Dr — was a practitioner of high character and large experience, long since gathered to the majority, and at least thirty years my senior. He was, in fact, a man for whom I ought to have had the highest respect and most complete consideration, and, to add to the severity of my regret, let me say further that he was a man from whom I had received considerable personal kindness. There was therefore no kind of justification for my doing what I did, sitting down and writing to him an extremely sharp letter commenting severely upon what I regarded as his professional misconduct in taking a patient when he knew that I had been previously called in. I was still more unwise in addressing another letter to the patient telling him how bitterly I resented his conduct, how little I was accustomed to it, and a great many more of the platitudes which we use in letters of this kind. The result of it was, of course, that I converted the patient from a possible friend into an actual enemy, and that for a very long time I forfeited the goodwill of the doctor who succeeded me in the charge of the case. If I had had a little more common sense, if I had at that time been able to subject my own consideration of self to the consideration of the interests of the patient, I should have seen at once that, however harsh and however pecuniarily oppressive the patient's conduct to me was, from his point of view it was quite just and very wise. The mere fact that I was called in to see that patient and express an opinion conferred no proprietary rights on my part to the patient; he was a perfectly free agent to do what he thought best, and so long as he paid me for the one visit which I paid to him, I had no right to complain. He naturally thought that in so grave a state of matters as an attack of typhoid fever he would be much safer in the hands of a more experienced practitioner, and in this he was

perfectly right. Again, the practitioner who was called, on being made cognizant that I had seen the patient, and on being informed that I had been dismissed and been paid, was under no kind of obligation to refuse to take charge of the case. In fact, had he refused to give his service he would have been guilty of a grave professional misdemeanour. The only fault in the whole business was my inability to subject my own selfish interests to the welfare of the patient and the interests of another practitioner. The lesson was to me a very severe one, although I did not quite understand the full severity and the full advantage of it for many years,—not, indeed, until in a kind moment the practitioner who, I thought, had been guilty of so grave a breach of professional etiquette, and who had done me such a grievous wrong, condescended to explain the matter to me and put it in its proper light. Then, when I saw how foolish I had been, full and earnest were the expressions of apology which I made to him.

The error here was what lies at the bottom of nine-tenths of our professional squabbles, a belief that we have some kind of freehold property in our patients; and that after having been attached for a time to our clientèle, they have no right to leave us. They have a perfect right to call one doctor and leave him and send for half-a-dozen men in succession if they are prepared to pay for such a form of luxury, and to take the risk of such an unwise proceeding; and the practitioner who resents the exercise of this right on the part of even the best and oldest patients he has, is a very unwise man.

Still more unwise is he if he falls into the second kind of error to which we are prone, to believe that his neighbour deliberately filches his patients. To me it is very distressing in many instances—alas! far too many—to have, in towns which I visit, intimate friends who have long ceased to be on speaking terms with each other on supposed grounds of offence of this kind. If I am in consultation with one of them I am supposed not to know of the existence of the other, and for me to make a friendly call on my second friend whilst the professional guest of the other would be a deadly affront. Let me assure these friends that it is very unwise of neighbours to disagree, that the causes of their disagreement are, nineteen times out of twenty, wholly imaginary, and in the twentieth the cause exists only in the mendacity which patients frequently indulge in when narrating to one doctor their experience and opinions of another. The extent to which this mendacity will go sometimes is wholly incredible. I possess an indignant letter from a country doctor, who is now one of my most intimate friends, rating me for robbing one of his patients at the rate of two guineas a visit for twenty-three visits, thereby making it wholly impossible for them to pay his bill. I induced him to visit me, and showed him my books. I had seen the patient once, she pleaded poverty, my fee was one guinea, and it stands there to this

day unpaid. We ought to exercise more common sense when we hear these statements about one another, and treat them with large doses of salt, for you may depend there is not one of us escapes them; and when we tell them about the absent—*les absents sont toujours torts*—let us think that they may be similarly engaged about us.

Let me repeat, then, two of the principles of common sense as applied to the practice of medicine—do not imagine any proprietary rights in your patients, and do not believe in anything short of documentary evidence to the detriment of your neighbour when your patients make a change, to the effect that he has had anything to do with it save in a perfectly honourable way.

For the application of these principles there is another road of error open more for the seniors than the juniors, and they do not hesitate to avail themselves of it.

I have told a story of my own folly as a junior, let me tell you of incidents of folly on the part of seniors which have come under my notice. A long time ago—nearly sixteen years—one of my professional brethren in Birmingham, and now one of the fathers of our body, more than old enough to be my parent, was asked to meet me as the consultant in a special case. My name was little known then. I was a lad of twenty-five, and he a busy practitioner of over fifty, and he might easily have put me aside and secured an older consultant; but he acted with the most complete generosity, and when we met he made me feel that I was in contact with a gentleman, a man of common sense, and a man in every way my own superior. He accorded to me my position, and that helped me greatly; but he also taught me a great lesson, and there is no one with whom I ever came in contact who has more of my reverence and affection than that man. He did what was right.

Another of quite a different sort was asked to meet me similarly. He promptly declined, because he would not meet a consultant younger than himself, and another old enough to please him was selected. Before long I was asked to see a case with this same practitioner by the friends of the patient, and I told them the story of the first case. I told them also to go and make the suggestion that I should meet him, and that if he refused on account of my being younger, and if they still desired me to see the patient, I would see the patient without the practitioner, and this I did. I then gave the friends the choice of my conducting the case in association with a practitioner whom I should select, or leaving it to their first doctor. They chose my first alternative, and it was carried into effect. Of course I made an enemy of the man who was turned off. He never spoke to me to the day of his death, and abused me fervently at every opportunity. But I did not trouble. He was not a person having common sense. I carried into effect my principle that patients have a right to do what they think best. If they act unwisely they suffer, if wisely they

benefit, and no one has a right to interfere with or resent what they do. We may not like it when it is our turn to be sent adrift, but if we act on the dictates of common sense we shall gulp down our dissatisfaction and not talk about it. No practitioner has a right to refuse to meet any other whom the patient may wish to see save on two grounds. The first is, that the second practitioner is of such character that it would be disreputable, and therefore unprofessional, to be associated with him. There are, I am glad to say, very few cases in which this can be urged as a reason. The second ground is, that there are such relations, personal, social, or professional, between the two men who are to meet as to make it unlikely that the consultation would have any result beneficial to the patient. Thus two men who were not on friendly terms for other reasons could hardly be expected to go into a case with such cordiality as to be likely to serve the best interests of the patient, and therefore they had better not meet.

This question of "further advice" is one of the tangled knots of our daily life; and though every one of us has at some time or other chafed under the sore frequently raised by it, we rarely discuss it in public meeting—in fact, I never heard it so discussed—but content ourselves with violent anonymous letters about the hardships suffered by general practitioners on the one hand, and the slights endured by consultants on the other. An amusing outburst of this kind has occupied the columns of our leading medical journals quite lately, and almost without a single exception these letters have shown their writers to be defective in common sense. The complaining general practitioner asserts that the consultant sees his patients without him, and supplants him, and suggests that no one should be recognised as a consultant who sees patients without the presence or concurrence of a general practitioner. The consultants, on the other hand, complain that they are behaved badly to by the general practitioners whom they often find out in mistakes.

To take the last difficulty first, we may say at once that we all make mistakes; no man is infallible unless he be an editor; and it is the direct intention and sole purpose of all consultations to find out mistakes and correct them. Thus, if I am called into a case of pelvic trouble and find out that a bad pyosalpinx has been overlooked, it is my business, my duty, to point out the mistake. But it is also my business and my duty to point out that mistake in a way that will not prejudice the patient's interests. If I found that my colleague was not to be convinced of my views as to the serious nature of the case, if he insisted on replacing what he regarded as a retroverted fundus by a big pessary, then it would be my duty to lay my views before the patient and her friends, and leave the responsibility with them. But if my colleague said, Well, I don't know much about these things, and must leave it to you, or if he was persuaded by the reasons I might urge in favour

of my conclusion, I would accept the responsibility. And no one need ever know of his change of views. Why should they? It is the old story of the diamond ring. I am a dealer in these kind of jewels, and he is not. It is no crime on his part not to be able to recognise them, but it would be on mine. If I expose his mistake I do the patient a real harm, for I disturb a confidence which may have existed for years, and which has been well earned. I would bring discredit upon a man who does not deserve it; in fact, by such ill-advised action I should do mischief all round, and bring ultimately discredit on myself. Common sense, therefore, shows that the real interests of all concerned are best served by the rule we act upon in consultations. But there is another side to this consultation question to which I have briefly alluded when I said that no man has a right to refuse to meet any other in consultation (with two qualifications) if his patient desires it. The prime principle of our practice is the welfare of patients, and therefore we are bound to give them every possible assistance. If there be any case in which from its special nature, or for other reasons, it is desirable that a consultation should be held, it should be not only not resisted when suggested by the friends, but their suggestions ought to be anticipated. Let me give you what I regard as a very sound conclusion from my own experience. Those practitioners have the clearest hold on the confidence of their patients who suggest consultations before the point is discussed by the family council. The very fact of the suggestion of "further advice" coming first from the family is an indication that some of them have proposed a vote of want of confidence. Moreover, when matters have got to that length they have in all probability made up their mind as to whom they shall have, and the choice is taken out of the hands of the doctor, who, if he advise honestly, is always the best adviser upon such a point.

Amongst young practitioners there is always the fear that to suggest a consultation will be the surest way to impress the friends with want of confidence, and it may be so in some cases. But then, you know, the public always suspects young doctors, and young doctors will go on losing patients from one cause or another until they lose their youth. But if they get the name of earnestness in their work, and protect themselves by consultations, they will secure confidence more rapidly than by resisting them.

On the other side of the question, consultants ought to be loyal to those who call them in, and certainly should not bag their patients. In fact, such a policy is suicidal, and no successful man, no man working for success according to Syme's immaculate principles, will do it. But it is an altogether different thing when it is attempted by some of our discontented brethren to lay down a law that such of us as are engaged in consulting practice should not see patients at all without the intervention of a general practitioner. I know that a large proportion of my clients would

not permit such an arrangement at all. Their ailments are such as to make it obviously disagreeable for the patients to discuss them with one with whom they are in frequent social contact, and this feeling, whether right or wrong, we are bound to respect. Then, again, I for one must frankly decline to make myself entirely subservient to anybody else, and to put my freedom entirely in the hands of others; for I have found a very curious tendency on the part of some of my brethren, which I have strongly resented, and from which I have been obliged in self-defence to establish a very simple rule. The experiences have ceased now for some years, and only the disagreeable result remains, gradually becoming less and less important; but they formed very bitter incidents at the time, for we feel all these things much more acutely when we are young and poor and struggling, than after the ship has come in.

What I mean is this:—A patient would come to see me in my rooms. I found she was under the care of a family doctor, and to that family doctor I wrote a letter giving my views as to the case and its treatment. The doctor would wax indignant with the patient for going to see anybody else without his knowledge and consent, and he would either answer my letter rudely or never answer it at all. Then I saw no more of the patient until I heard that the doctor had placed her under some one else. The principle here seemed always to punish me for an offence committed by the patient. Naturally I resented this, and it came about that I established a black list; and I took care that when a patient came to me and her doctor had his name on that list, she did not go back to him. On the other hand, to men who sent patients to me I have been, so far as I know, consistently loyal. If I have ever erred it has been unwittingly, and I regret it.

The stupid misunderstandings which arise out of this unnecessary warfare are very detrimental to everybody concerned, and are wholly antagonistic to Syme's great principles. On the question of consultants and general practitioners, the rules are, I think, simple and safe. They are mere expressions of common sense:—

1. Always be first in the suggestion of a consultation, and do so in every case where you can find reason to believe your patient's interests require it or can be aided by it.

2. Never refuse to meet any man of decent conduct, whatever his age or position.

3. If the selection of the consultant be left in your hands, make your selection with an honest desire to do the best you can for your patient, and not with the mere intention of serving a friend.

Amongst the main reasons why I have regretted that we did not have lectures in our students' curricula on the "Exercise of Common Sense in the Practice of Medicine," is that we had no kind of instruction in that very important question of pecuniary recompense. In the old apprenticeship days we learned not only

how to manage the diseases we had to treat, but we learnt the far more difficult question of how to manage our patients. The most important question of management is that of fee, and for our guidance there are many principles and practices followed which are apparently quite contradictory, and all of which have the misfortune of never being publicly discussed. I never yet heard a paper at a medical society on the question of medical remuneration, and yet I know of none which is of greater importance to us and to our patients as well, and none in which there are such discrepancies of opinion and practice.

I had only a very brief and limited experience of general practice, and what I can say on the subject of remuneration of my brethren engaged in it can only be conveyed by such general principles as I have deduced from my experience as a specialist. As these conclusions are in direct opposition to many of the traditions of the fathers, and as I have never until this moment had an opportunity of discussing them, I wish to devote a few words to them.

The old and time-honoured distinction between consultant and general practitioner in the question of fee is one which cannot but be continued, and even extended; for the principle of the division of labour, for which specialism is but another word, involves special work and very special waiting for remuneration by those who take it up. For the best years of his life the specialist will see twenty patients without pay for every one from whom he gets the traditional guinea. His equipment is more costly, his rent higher, and between the ages of 25 and 40, or even 45, the life of the general practitioner is much more prosperous and happy than is that of his brother specialist or consultant.

I am therefore a strong advocate for a graduated scale of fees, the rate of increment being settled, of course, by each for himself. I do not think the scale ought to start from anything less than a guinea, otherwise the feud between the consultants and general practitioners will only wax warmer. But it is far more clear that the present tradition that a young consulting surgeon should compete with one of thirty or forty years' standing on this same scale is an absurdity. Forty years ago possibly Mr Paget's opinion was fairly remunerated by a two guinea fee, but I am certain that now any opinion of our surgical premier is well worth ten guineas.

I have also instituted in my own business a time scale, which simplifies matters very much. "What is your fee for a consultation?" writes a patient. I answer, "That depends on the time occupied, and is at the rate of four guineas an hour." It used to be two guineas an hour, then three, and I live in hopes it will increase in value.

This time scale also helps me to settle that vexed question of fees for journeys with the greatest simplicity and readiness. The tradition of mileage, based on the posting system of our grand-

fathers, is a ridiculous anachronism in these days of fast trains. As I can do a consultation at Bristol in less time than I can in Bridgworth, why should mileage govern my fee? I began my scale at two guineas an hour, and I have raised it, and hope to raise it still more, and this is easy and intelligible to the patient. It is better for me, and it leaves the ground freer for those who come up as my juniors. It also saves my time, for I find relatives and gossip friends are quite as anxious to get me back by the next train as I possibly can be myself.

Finally, the question of fees for special service, such as operations, is one on which a clearer understanding has long since become necessary. The old idea was that certain operations had certain arrangements of fees which must not be in any way lessened, and for an important operation, such as ovariectomy, the tradition was that a very large fee must be asked; and if that sum should be beyond the powers of the patient, the case should be handed over to some charitable method of treatment. Now, I object altogether to the immense amount of charitable treatment which we have to undertake; that a great deal of it is necessary I am perfectly sure, but I am equally certain that we alone are answerable for the immense amount of abuse which exists in this direction. The principles upon which I have gone, and against which I have found no good argument, are very simple. I believe, in the first place, that nobody values services which are gratuitous half as much as if they paid something for them, even if that something were a wholly inadequate return. I believe also in the principle, which, I think, has a uniform application, and one which can be applied to general practitioners as completely as to those of us who occupy more clearly defined positions, that the public value us just at our own price, less 5 per cent. discount for cash. That any man who is fool enough to labour in dispensary work at 1s. a visit will have his services estimated at 11d., whilst he who either can or will insist upon a higher valuation will have that willingly accorded to him, though also with discount, is, I believe, a mere truism.

A third principle is, that the value of professional services is very largely governed by the importance of the patient to whom they are rendered, and that the measure of the responsibility must be placed on record by an increment of fee. Thus it is that in my own special work I have no such things as fixed fees; they are governed entirely by the principles which I have just enunciated, and these principles have an application which is always governed by the advice of my colleague in the case. I have, therefore, great satisfaction in feeling that the number of instances in which I have had any difficulty about payment are very few, and have been extremely trifling. Also, I have a further satisfaction in that the number of cases in which I know I have been swindled are very few. It is, in fact, alike the interest and the duty of the general

practitioner to see that his patient is not oppressed by an operation fee; and, on the other hand, it is alike his interest and his duty to his professional brother, and to the art which he practises, to see that these services are not valued too slightly and remunerated disproportionately. In fact, in all this we can apply Syme's rules with the greatest precision; and, therefore, when I say that for an ovariectomy my fee runs as readily for five guineas as for a hundred, you will see that I put my principles into action. I believe that to the artizan or the clerk a fee of five guineas is as great a payment as the hundred is to the merchant or the rich manufacturer. But I also feel that to make him a present of my services without the payment of that five guineas would be a degradation of these services, and a pauperization of their recipients which neither he nor they deserve.

Gentlemen, I know not whether or not in these hurriedly written sentences I have taught you any common sense. I hope I have. I know that they relate conclusions which I have had much cause to regret I had not instilled into me earlier in life. I have, I trust, to put them in action, how well or how badly I know not, for no one can judge of his own doings. I fear I may have wasted your time, and if so you must forgive me. You asked me for this address, I tried to keep out of the beaten paths, and if my road is neither new nor interesting, nor one from which profit can be derived, you must lay at least some share of the blame on those who paid me the high and undeserved compliment of appearing here to-night.

II.—AN OUTBREAK OF CEREBRO-SPINAL FEVER.

By T. J. MACLAGAN, M.D., M.R.C.P., Physician in Ordinary to their Royal Highnesses Prince and Princess Christian of Schleswig-Holstein.

(Continued from page 398.)

The Period of Incubation.—This is difficult to determine with accuracy in any disease—a single exposure being so rarely followed by consequences. All that we can do in the present case is to determine in a few instances the limits within which exposure took place:—

1. A. M., so many members of whose family suffered, had been working in a different part of the country, and had not been home for three or four months. He came home on hearing of their illness. He came on the 31st December and left again on the 9th of January. He was seized on the 19th, and there can be no doubt suffered from the same form of fever as his family. Granting this, the period of incubation in his case was not less than ten days, nor more than nineteen.

2. The boy J. K. died in hospital of cerebro-spinal fever early

on the morning of the 1st of February. His father, J. K., visited him frequently during his illness, and sat up with him the whole of the night on which he died. He was seized on the 11th February. Granting that he contracted the disease from his son, which is as certain as such a thing can be, the period of incubation was not less than ten days. Its other limit cannot be determined, as he had been more or less exposed to the disease for weeks.

3. J. K. came to hospital on the 18th February. Between the date of his seizure, Feb. 11th, and that of his removal to hospital, he was frequently visited by his sister, who resided in a different part of the town. She shivered on the 23rd, and as she did not see him after the 18th, the period of incubation in her case was not less than five days; its other limit cannot be determined, as she visited her brother's house during the illness of his children as well as during his own.

4. G. M. and his wife were both seized on the 3rd February. They both contracted the disease from their daughter, who took ill on the 10th January. The longest possible duration of their period of incubation was twenty-four days.

5. The B. family all lived in one room. Harriet, the first to suffer, took ill on the 2nd February, and was removed to hospital on the 10th. Her brother's illness commenced on the 23rd, her mother's on the 24th, and her sister's on the 26th February. Granting that they caught the disease from Harriet during the week that she was at home, of which there can be no reasonable doubt, the period of incubation in these cases was at least thirteen, fourteen, and sixteen days respectively, and in no case more than a week more. From the facts given one may reasonably draw the inference that the period of incubation in cerebro-spinal fever is about a fortnight.

MORIBID ANATOMY.—The characteristic lesion of cerebro-spinal fever is found in the membranes of the brain and cord. In all the cases in which a post-mortem examination was made, this lesion was quite distinct. The appearances were the same in all, and consisted—(1), in increase, sometimes very considerable, in the quantity of cerebro-spinal fluid; (2), in lymphic effusion on the surface of the arachnoid; and (3), injection of the minute vessels of the pia mater. These appearances were found both on the brain and cord. The inflammatory signs were confined to the surface. In not one case was there any effusion into the ventricles, or increased vascularity of the substance of the brain or cord. On the surface of the brain, too, the lesion had its limits. In marked contrast with what occurs in tubercular meningitis, the inflammation was confined to the upper surface of the cerebral and cerebellar lobes, not in one case was any lesion found at the base. In the cerebrum, too, it was the posterior lobes that chiefly suffered. Sometimes one hemisphere was more affected than another. In one case the inflammatory products were found only on the

cerebrum; in another only on the cerebellum and cord. This cerebro-spinal lesion was the only inflammatory lesion which was constantly found. The only other change which invariably presented itself was an enlarged and softened condition of the spleen, the enlargement and softening being as marked as anything one finds in typhus or typhoid fevers.

One word as to the nature of the disease. The view that we take of this must depend on the view that we take of the nature and mode of production of the cerebro-spinal lesion, and of its relation to the general symptoms. Is it a simple non-specific inflammation like an ordinary pleurisy or peritonitis, or is it a specific lesion dependent, like the bowel lesion of typhoid, for instance, on the action of a special poison circulating in the blood? In other words, is the disease simply a cerebro-spinal meningitis, in which all the symptoms are dependent on the inflammatory lesion? or is it a cerebro-spinal fever of which the meningeal inflammation is only the characteristic local lesion? That many of the symptoms are such as would be explained by the former view there can be no doubt but to say that, is simply another way of saying that inflammation of the cerebro-spinal membranes must give rise to the febrile symptoms common to all serious inflammations, *plus* other special symptoms consequent on the peculiar seat of the lesion—*et cela va sans dire*. Such a view unduly limits the range of our vision; it takes in only one part of the field of our inquiry, and leaves untouched some very important questions. It is not enough to explain the general febrile disturbance, and the occurrence of special symptoms referable to the nervous system (which is all that that view does); we have also to explain why the disease spreads from individual to individual, affecting one member of a family after another, and always those most in contact with the sick. We have further to give some explanation of the occurrence of a peculiar and characteristic rash, of the frequency with which albuminuria occurred; of the enlarged and softened condition of the spleen; of the tolerably fixed and definite duration of the febrile symptoms, and of the rapidity with which these declined. Regarding the disease as a simple meningitis, these phenomena are inexplicable, for no simple local non-specific inflammation could give rise to the coincident occurrence in so many cases of a characteristic rash, of albuminuria, and of splenic enlargement; and it is beyond the range of the remotest probability that so many cases of so rare a disease as a simple idiopathic meningitis should occur in one hospital within so short a period of time; and that, having occurred, they should all have so similar a course and duration. The distinct evidence of contagiousness seems to give the final coup to the view which would regard the disease as simply a local inflammation.

There remains the other view that the disease is a true specific fever, of which the cerebro-spinal inflammation is the

local lesion, bearing to the general ailment the same relation that the sore throat does to scarlatina, or the bowel lesion of typhoid fever to the general symptoms and pathology of that disease. According to this view the disease results from the action of a specific poison, which enters the system from without. Such a view ranks the disease among the specific fevers. On this view of its pathology the whole of the phenomena which present themselves for our consideration are readily explained. Its evident contagiousness, the occurrence of a characteristic eruption, the presence of albumen in the urine, and the fixed duration of the febrile symptoms, are explained in the same way as the existence of like phenomena in other specific fevers. To one point in connexion with this argument I would for a moment draw special attention—it is the fact that some degree of splenic enlargement was frequently noted during life, and that in all the cases in which a post-mortem examination was made the spleen was large, soft, and of a mahogany colour. In one or two cases the softness amounted almost to diffidence, and in one case this went so far that the organ actually gave way while the patient was lying quietly in bed, and she died of hæmorrhage from rupture of the spleen. This condition of the spleen is one which is associated with no form of simple local inflammation, but only with fevers caused by a specific poison entering the system from without. We are most familiar with it as it presents itself in typhus and typhoid fevers.

The fact that this condition of the spleen was invariably found after death brings the evidence of morbid anatomy to support the view, which best serves also to explain the clinical features of the disease, that it is a true specific fever dependent on a special poison entering the system from without. This poison, like those of the other specific fevers, I believe to be a minute organism which is propagated in the system in and at the expense of the tissues on which it grows. An organism which thus grows in and at the expense of another is a parasite. It is a distinctive peculiarity of parasites that each has its own special nidus, its own habitat, in which, and in which alone it is reproduced. This one is found in small intestine, that in large; this in kidney, that in liver; this in brain, that in muscle; this on skin, that on mucous membrane. Regarding contagia as parasites we accord to them similar properties, and should expect to find that each contagium had a preference for some special locality. Now, what imparts its distinctive features to each of the diseases produced by contagia is, as a rule, not so much any peculiarity of the general symptoms, as the existence of some local complication, generally inflammatory mischief in this or that organ or tissue. Finding the same local lesion constantly occurring in connexion with the propagation in the system of a particular contagium, and finding that a similar lesion is never produced by any other agency, we cannot fail to see a

connexion between the specific properties of the contagium and the distinctive lesion of the disease to which it gives rise. The exact nature of the connexion I believe to be that the seat of the lesion is also the nidus of the parasite; and that the disturbance which constitutes the lesion is the result of the propagation in that nidus of the millions of minute organisms which are reproduced during an attack of any of the specific fevers. On this view the cerebro-spinal meninges are the nidus of the poison of cerebro-spinal fever, the special habitat in which that poison finds the material necessary to its reproduction, and it is because they are so, that inflammation of these membranes forms the characteristic lesion of that disease.

Treatment was essentially symptomatic. To keep the patient quiet, to give liquid nourishment, and to procure sleep, were the indications. Ice to the head and spine, with frequent sponging, were found to be comforting and to diminish restlessness. In cases in which there was much distress one or two full doses of chloral, with or without bromide of potass, were at times of signal service.

Mortality.—Of the thirty-four cases, eight died of the fever—a mortality of over 23 per cent.—and one of erysipelas during convalescence.

III.—CASE OF EPIDEMIC CEREBRO-SPINAL MENINGITIS.

By B. LANGLEY MILLS, M.D. Ed., M.R.C.S.L., Surgeon, Medical Staff.

THE following case of epidemic cerebro-spinal meningitis is, I think, sufficiently interesting to be put on record:—

E. E., aged 8 years, was admitted into hospital on 22nd June 1886, suffering from intense headache and severe vomiting.

Family History.—Parents healthy; two brothers healthy.

The patient, a delicate, strumous girl, has suffered for the past three years from chronic inflammation of the right knee-joint.

History of Present Illness.—The day previous to admission she was in her usual health. The day was very warm, and she was exposed to the sun for some time while being photographed with some school-children. The same evening, about six P.M., she complained of nausea and giddiness. She had a rigor, and was slightly delirious at night. When seen she was found to be suffering from intense headache and severe and almost incessant vomiting of a greenish fluid material. The vomiting was quite apart from the ingestion of food, and without nausea. The headache was most severe, and she frequently cried out from the pain. The cry was peculiar, being partly of terror and partly of pain, and the patient

seemed in the first stage of tubercular meningitis or of malignant scarlet fever. The pupils were evenly contracted, and there was no squinting. There was great restlessness. The pulse was 90, and inspirations about 35 per minute. The pain from the head extended into the upper part and down the spine, with great intolerance to light and sound. The skin was dry, but not very hot; and throughout the disease no temperature above $102^{\circ}5$ was noted. The tongue was dry and brown, and during the day there was much delirium, with delusions of sight. The belly was sunken, and the bowels obstinately constipated. There was a good deal of pain and tenderness in the abdominal muscles, and the patient laid on her side with her knees drawn up to relax them.

On the 23rd, after a very restless night, with much delirium and vomiting, she was found to be considerably worse. The neck was found to be bent back, not so much from spasm of the muscles, as from a voluntary effort to relieve pain, and the head was bored into the pillow and kept rigidly immovable, with the face upwards towards the head of the bed. The vomiting decreased during the day. The skin was still dry, and the pulse of a peculiar jerking, irregular character, about 105 per minute. There was marked "tâche cerebrale," and the extremities were cold. Temperature, 102° .

On 24th June, i.e., the third day, there was an eruption of small raised shot-like roseolous spots, bright pink in colour, about the size of a split pea. This eruption began on the forearm, and quickly spread over the whole body. The delirium diminished during the day, but came on again at night. The tongue and skin were moister, and the temperature lower (101°). There was less restlessness, and the mind seemed clearer.

25th June.—When the patient was sensible she complained of the intense headache and pain all down the spine, and there was great hyperæsthesia all over the body. The breathing was irregular, and sometimes "cerebral" in type.

26th June.—The pulse was more regular. She was delirious only at night. All vomiting had ceased, but pressure on the spine or the slightest movement caused intense pain. The neck was still kept rigid.

From this date to 4th July there was steady improvement. The temperature never rose above 100° . The pulse and breathing were regular, but the bowels were still obstinately constipated. On 4th July she had a relapse. There was intense pain again in the head and neck, and also in the right hip and knee. The vomiting returned, but passed off during the day. The pain in the hip persisted, and seemed to be sciatic in origin. There was also great pain on both sides of the lumbar region of the spinal cord, and the slightest touch caused most intense pain. There was much delirium again at night, and the temperature reached its highest point, viz., $102^{\circ}5$.

5th July.—All the symptoms were much improved. The vomiting still occasionally occurred, but passed off during the day.

10th July.—Steadily convalescing.

15th July.—Has steadily improved, and is now able to be moved from one bed to another, though she complains of much pain in the back during movement. All the sciatic pain has gone.

26th July.—Was able to be up and move about slowly. She was very unsteady on her feet while walking, and when her eyes were closed and her feet placed together, was unable to balance herself, showing that the upper part of the spinal cord has not yet recovered itself entirely.

31st July.—Is still weak, but can walk and stand much better.

7th August.—Is still improving. Appetite very good, and sleeps well at night.

16th August.—Is now practically well.

Treatment.—The treatment adopted was at first ice to the head and neck, and ice to suck. Cooling saline draughts and moderate purgation by calomel. Counter-irritation by mustard leaves was applied to the sides of the neck and spine when the pain was severe. A milk diet was strictly adhered to. Internally ergot and belladonna were given, and opium and chloral at night. When convalescence had set in, 3-grain doses of the citrate of iron and quinine were given thrice daily, and 2 ounces of port wine daily.

Remarks.—This was an uncomplicated case, ending in fairly rapid recovery. Another similar case was said to have occurred at the same school just previous to this one, but I have not been able to trace it. According to Ziemssen's observations on this disease, the fever has no regular course. No regular course was noticed in this case, and the temperature was never noted above $102^{\circ}5$; and the frequency of the pulse did not at all correspond with the height of the fever. On 4th July there seemed to be a sudden intermission, such as has been described by Hirsh. Contrary to the majority of these cases, this one occurred in a girl and in the summer. Epidemics of this disease generally begin in the winter, and disappear as the warm weather comes on. There was no particularly unfavourable hygienic conditions to account for this case, and the disease did not spread to any one in contact with the patient.

The first described epidemic was in Geneva in 1805. In 1846 Mr R. Mayne, in the *Dublin Quarterly Journal*, described a large number of cases occurring in recruits for the Royal Irish Constabulary. The disease was called the "black sickness of Dublin," and the mortality ran as high as 80 per cent. There has never been any great prevalence of the disease in this country. There was a notable epidemic in Dantzic in 1864-65; another in New York in 1872; and a slight epidemic in Birmingham in 1876.

IV.—CASE OF PHTHISIS, COMPLICATED WITH A TYPHOID CONDITION.

By A. C. MILLER, M.B. Edin., Surgeon to the Belford Hospital, Fort-William, N.B.

THERE are some points of interest in connexion with the complication in this case which may be worthy of record in the pages of the *Edinburgh Medical Journal*.

The patient, æt. 46, was originally a very healthy man, of strong physique and constitution; but his family history showed a phthisical tendency, and intemperate habits, to which patient had latterly given way, in due time developed the latent taint. Patient's first complaint was cough and spit, and increasing weakness. Examined about three months before the final attack, the right apex was found consolidated. Sputum purulent and nummulated. Evening temperature, one or two degrees above normal. Respiration accelerated. Patient was advised of his condition, and to exercise caution. He preferred, however, to continue to follow his occupation, thus exposing himself to fatigue, to changes of temperature, and to alcohol, all of which contributed in some degree to the fatal illness. Mist. Begbie and cod-liver oil were prescribed, and faithfully taken by patient during the weeks preceding this attack.

When called to see patient, he was found flushed and feverish. He had been imbibing freely, he said, and was laid up in consequence. The chief complaint was of frontal headache, with pains in the bones. The tongue was thickly furred, brown, and dryish. The pulmonary condition was much as when last examined. Indeed, pulmonary symptoms were by no means prominent. The cough was very slight, and breathing comparatively slow (20–24 per minute). Sputum greatly lessened. Beyond a dull, heavy feeling in the epigastrium after food, gastric symptoms were negative. There was no vomiting, no hiccough. The abdomen was somewhat retracted, and the bowels were constipated. The condition of the pulse was peculiar; it was slow and deliberate (40–60), full, regular, and of good tension. "Tache cerebrale" could be elicited. Profuse, clammy perspiration bathed the skin. There was no tremulousness nor hyperæsthesia. The urine was acid, of normal sp. gr., and loaded with urates.

Intelligence during the day was unimpaired, but at night there was tendency to delirium. A saline purge was administered, and a mixture containing potass. chlor., sp. ammon. arom., and sp. æth. nit. was given at intervals during the day. Diet to consist of stimulating soups, with milk and soda-water.

Temporary improvement resulted. But, notwithstanding that a fair amount of sleep was obtained during the 24 hours, the delirium at night persisted. Bromide and hyoscyamus and chloral failed to give relief, and gradually this delirium stole into the hours of day-

light, until ultimately it became an always-present symptom. Along with it there developed symptoms to be described below.

The delirium was of the "low muttering" type. Patient would ramble off a few incoherent sentences in a low tone, as if speaking to himself, while evidently he was under the impression he was addressing others.

When spoken to, he would reply intelligently to any question not involving mental exertion, but consciousness would shortly lapse into the "low muttering" as before. At long intervals there were paroxysms of excitement, when patient would remonstrate with real or imaginary personages, or perhaps even leap out of bed. These paroxysms seemed to exhaust patient, for they were generally succeeded by periods of quiet sleep or of calm composure. There was no moaning, although patient could indicate when and where he felt pain. Picking of the nose and bedclothes was constantly going on. This symptom was marked from the commencement.

Coincident with the development of this condition, the tongue became dry and covered with thick brown fur, and sordes collected about the teeth. The stomach retained food to the end. Milk and soups were readily taken by patient in small quantities, frequently administered. The pulse gradually and steadily rose to 80 beats per minute, and finally, on the last day, to 140. It never lost its regularity. Pulmonary symptoms remained quite subordinate. Retention of urine supervened at an early stage, but it was not continuous.

The character of the urine varied, sometimes being scanty and high-coloured, sometimes heavy with urates. Albumen was not present. The constipation had to be combatted with enemata, but latterly the anal sphincter became relaxed, so that even enemata failed to be of use. The temperature varied from subnormal to 103° F., above which it did not rise. The pupils were moderately dilated, equal, and sensitive to light. The conjunctival reflex was good. There was no strabismus, and, beyond the affection of the bladder and rectum, no paralysis of any kind. The special senses towards the end were blunted, but not obliterated. Patient preferred to lie upon one or other side during greater part of the illness. The dorsal decubitus was only assumed a day or so before death, which occurred by way of increasing asthenia. "Subsultus tendinum" appeared before death. There was no deep coma, and no convulsions.

Total duration of attack was 18 days, dating from first confinement to bed.

The case is instructive as an example of the typhoid condition supervening in a debilitated phthisical constitution, as the result of the combined influences of alcohol, exposure to fatigue, cold, and wet.

The symptoms, after eliminating remoter possibilities, were at first such as might make one suspect either of two conditions—viz., alcoholism pure and simple, or tubercular meningitis.

The history and habits of patient were quite favourable to either conclusion, but as the case developed it became clear that neither diagnosis could be held.

First, with regard to the alcoholism, there was no tremulousness of tongue or of limbs. The delirium was not of the busy, restless type, and there was not present that *kind* of hallucination characteristic of alcoholism, such as the horror of creeping beasts, devils, and so forth. Further, sleep brought no relief. Patient during his illness had long intervals of what seemed quiet, wholesome sleep, and yet, on awaking, the same low muttering delirium proceeded as before.

Then as regards the diagnosis of tubercular meningitis, there was an absence of gastric symptoms, and there was no vomiting. Hyperæsthesia, rigidity of the spine, retraction of the head, were absent. The pupils were not contracted, and to the end they responded to the stimulus of light. There was no strabismus, and, beyond the implication of the sphincter for micturition and defæcation, no paralysis whatever. There was no "cri." Pulse and respirations, though slow, were regular. Convulsions never appeared.

The typhoid state is a convenient term to apply to a series of symptoms resembling those met with in the later stages of typhus fever. It is apt to supervene in many diseases, when the system is worn out with exhaustion. The peculiarity in the present instance is its having occurred in a constitution in which the phthisical process had not proceeded to a very advanced stage. Phthisis, *per se*, would not so soon have carried off the patient. Other debilitating influences were required in order to reduce the system to that point at which the "typhoid" virus could take effect and work towards the fatal end; and conversely, these influences in a healthy constitution might not be sufficient for the development of the condition in question. The *modus operandi* is easily understood.

The gastric function under alcohol is deranged; digestion and assimilation are imperfectly performed; and the blood, imperfectly nourished, is unable to carry on satisfactorily its double duties. The hepatic and renal functions get disordered, effete products collect in the blood, the great nervous centres become poisoned, and we have presented to us the series of phenomena known as the "typhoid state." Possibly merely chemical products, *e.g.* urea, alone produce the result; but possibly some micro-organism in addition is developed in the blood and tissues. The former might be rectified, but not so easily the latter, and hence probably the hopeless nature of the affection. In the present case nourishment was readily ingested, the kidneys and bowels were kept in action, and yet the blood was too feeble and impure to throw off the fatal influences it contained. After all is said and done, we are forced to the conclusion that prevention is best. We must warn our phthisical patients—our patients exhausted from any debilitating influence—to avoid habits tending to derange the organs. Our aim

must be to stimulate and nourish the system up to *par*, so that the blood may be able to discharge its functions of nutrition and excretion—that no effete chemical products can accumulate within it, and no micro-organisms be developed.

V.—TWO SEVERE CASES OF CHRONIC DYSENTERY.

By W. H. LANG, M.B., C.M. Edin., Corowa, N.S.W.

THE following notes on two severe cases of chronic dysentery may be of interest and value to some who may be driven to their wit's end, as I was, in giving relief to intractable chronic dysentery.

CASE I.—Mr J. S., aged 28, had been suffering for five years. The disease was contracted in Fiji, and he had been under a large number of doctors since then. Each one had promised him a rapid cure, and he had obtained benefit for a time from half-drachm doses of *ipecacuanha*. The last medical attendant (a homœopath) had told him that he was suffering from internal piles. On examining him I found all the organs healthy, and could see or feel no trace of piles. There had been phthisis in his family. The motions were composed of a bad smelling jelly-like substance, mixed with a considerable quantity of blood. They numbered from eight to ten per diem.

I determined to persevere with sulphate of quinine, alternating it with liquor ferri pernitratis, as the disease had been contracted in a malarious climate, and he was very anæmic. He also used injections into the bowel of hazeline, thrown as far up as possible, and wore a water belt for several hours a day. From this treatment he obtained no relief, and as everything else seemed to have been tried, I felt somewhat despairing. My attention, however, was called to an article in an old number of "*Braithwaite's Retrospect*," recommending potas. nitratis for a case of this kind, and I at once tried it,—giving the following three times a day before food:—

R Potas. nitr., . . .	grs. xxv.
Sp. chloroformi, . . .	℥xx.
Liq. opii. sedat., . . .	℥viiij.
Sp. æther. nitrosi, . . .	℥xx.
Aq., ...	℥j.

On the second day the motions were reduced to six. The third day to three, and since then, for over a month, there has only been one, or at most two, good healthy natural motions. In fact, at one time I had to order him *cascara sagrada*, as the bowels became too confined, although the opium had been removed from the medicine. All this time he was on a plain, bland diet of milk, milk puddings,

eggs, and fish. He has gained greatly in weight and strength, and is as ruddy as David was.

CASE II.—Miss L. K., aged 25. Two and a half years ago caught a bad cold, and dysentery had commenced, and had never left her. Her doctors had given her up, saying no medicine could do her any good.

All her organs were apparently healthy; family history, good. Menstruation had ceased from the first. She was very anæmic. Motions typically dysenteric, and very bad smelling; twelve or thirteen during the twenty-four hours. I put her on liquor ferri pernitrat, and persevered for three months with it, during which time the motions became reduced to four or five per twenty-four hours. Menstruation commenced, and she gained splendidly in weight. I now tried the potas. nitrat., having met with such success in the previous case. But here disappointment awaited me. The motions became more frequent and bloody, menstruation ceased, and all the previous advantage was lost. Why this should have occurred I am at a loss to understand. I am now, by one drachm doses of ipecacuanha, endeavouring to allay the exacerbation, and shall then return to our old friend, the liquor ferri pernitrat; but it is somewhat puzzling why the one medicine should have acted in the one case and failed so entirely in the other.

VI.—COMMUNICATION ON THE COLD NITRIC ACID TEST FOR ALBUMEN IN THE URINE AS AN AID TO THE DETECTION OF THE BILE SALTS.

By JOHN STEVENS, M.A., M.B., C.M., Ettles and Stark Scholar.

(Read before the Medico-Chirurgical Society of Edinburgh, 7th July 1886.)

IN testing for albumen by the cold nitric acid method it is sometimes observed that there is in the column of urine, a little above the line of contact of the two fluids, a layer of precipitation quite distinct from the precipitate of albumen produced by the nitric acid. This is distinguished from the precipitate of urates which sometimes occurs by not disappearing when heated. When observed at all it has been described as mucin precipitated by the acid. Dr Maguire has recently referred to this reaction in an article in the *Lancet*,¹ and, while describing it as the mucin reaction, has expressed doubt as to whether it is really due to mucin, because he has never found it apart from the presence of albumen, and he has seen it in urines in which acetic or citric acid did not precipitate mucin. This corresponds in the main with my own observation. I have sometimes, however, noticed a

¹ *Lancet*, 12th June 1886, p. 1108.

very slight precipitate occurring in the same position in urines containing no albumen, and this slight precipitate is, I believe, correctly ascribed to mucin. The upper precipitate observed when albumen is present is often, however, much more dense than this faint mucin precipitate, and it is evidently to this more dense precipitate that Dr Maguire refers. I have lately, under Professor Grainger Stewart's directions, been making a series of observations on the urine in a case of cyclic albuminuria, and have found that in samples of the urine which contain albumen this reaction is well marked, whereas it is absent in samples which do not contain albumen. I have observed it very distinctly in several other albuminous urines lately; and, further, it is present only in *some* albuminous urines, not in all.

What, then, is the condition which leads to its presence? I have come to the conclusion that *it is due to the bile salts precipitating the albumen when the urine has been properly acidified, and that, when the reaction is well marked, it is an indication that the bile salts are present in excess.* Dr Oliver of Harrogate has recently shown¹ that if an albuminous urine is acidified with citric or acetic acid the albumen is precipitated by a solution of bile salts; and that if, as sometimes happens, an albuminous urine contains the bile salts in excessive amount, the addition of a small quantity of organic acid will lead to a precipitation of the proteid. The same thing occurs if, instead of albumen, there is peptone present; and Dr Oliver has taken advantage of this fact to elaborate an extremely delicate method, not only for the detection, but also for the quantitative estimation, of the bile salts in the urine by means of a standard solution of peptone acidified to the proper degree with acetic acid.²

The action of nitric acid will be readily understood from what has just been said. At the line of contact strong nitric acid precipitates the albumen, but it also mixes to some extent with the column of urine above. Now, it is only at a certain degree of acidity that the bile salts can precipitate albumen or peptone. The lower part of the column of urine is too acid, while the upper part, if too much mixing of the fluids has not occurred, is not sufficiently acid. It is thus only at a certain level that this bile salt precipitation of albumen occurs.

That the bile salts are the real precipitants may readily be proved by taking an albuminous urine which gives no reaction except that produced by the nitric acid, or which only gives in addition a faint precipitate like that sometimes due to mucin in a normal urine. If to this urine a few drops of a solution of taurocholate of soda be added, and the cold nitric acid test applied, there will be produced, not only a precipitate by the nitric acid, but also a well-marked precipitate higher up, the density of which

¹ *Bedside Urine Testing*, 3rd ed., pp. 206 and 207.

² *Idem.*, p. 209.

depends, if there is a sufficiency of albumen present, upon the quantity of bile salts added. If, again, two urines be taken, one with an excess of bile salts, and the other with albumen but without excess of bile salts, nitric acid will give no reaction with the first, and, if any, only a slight upper precipitate with the second. But if a little of the albuminous urine be first added to that with excess of bile salts, nitric acid will give not only the ordinary precipitate at the line of contact, but also a well-marked precipitate higher up than, and quite distinct from, the other. This indicates how the bile salts may be detected when there is no albumen in the urine.¹

There is one condition in which the bile salts will produce a precipitate in the absence of albumen—namely, when there is peptone present. I have not yet met with this, but on adding a little peptone to a urine with an excess of bile salts, this reaction can be distinctly obtained. Thus, while nitric acid does not itself precipitate peptone, it supplies the requisite degree of acidity in presence of which the bile salts precipitate that proteid. A precipitate so produced might be inadvertently mistaken for albumen, but it is distinguished from that by occurring not at the line of contact of the acid with the urine, but a little higher up. This well-marked precipitate occurring in the absence of albumen is thus an indication of the presence both of peptone and of an excess of bile salts.

This combination of peptone and excess of bile salts, though it has been observed by Dr Oliver,² is a rare one, whereas the presence of an excess of bile salts alone in the urine is not infrequent, and the reason why so little attention has been paid to their detection is, I believe, mainly because there has been no satisfactory test for them of such simplicity as could be used in clinical work.

So delicate is this test, that when the albumen is in small quantity the bile salt reaction may be as distinct as that produced by the nitric acid, and it is sometimes the more distinct of the two. Not only does it occur when the bile salts are present in excess; even the small quantity which is excreted in health often suffices to give a slight reaction, especially if the urine is concentrated. As the extent of the reaction which may occur in health varies with the concentration of the urine, it is well to dilute concentrated urines to about the normal specific gravity before applying the test in order to diminish this variability.

The precipitate of mucin produced by nitric acid resembles the albuminous precipitate produced by the bile salts in being soluble

¹ The test is in no way interfered with by the addition of a little carbolic solution to the albuminous urine; and, as urine so treated may be kept for any length of time, the inconvenience of requiring an albuminous urine is reduced to a minimum.

² *Lancet*, 18th April 1835, p. 701.

in excess of the acid, so that it also forms a layer at a certain height in the column of urine, and may be indistinguishable from the slight albuminous precipitate produced by the bile salts when these are not in excess. Dr Oliver has, however, shown¹ that the bile salts precipitate mucin as well as albumen, and he suggests that this is the explanation of the precipitation of mucin in the urine. But it seems more probable that the faint precipitate of mucin which may occur in normal urines is due to the acid added, whereas the more dense mucin precipitate, which occasionally occurs at least in jaundiced urines, is to be ascribed to the presence of an excess of bile salts. At any rate, the only occasions when I have observed a really dense mucin precipitate have been in cases of jaundice with excess of bile salts in the urine. This precipitate of mucin by the bile salts appears to differ from the ordinary slight mucin precipitate, in the fact that it is much less readily soluble in excess of the acid. Thus, in non-albuminous jaundiced urine, a well-marked precipitate is sometimes produced by cold nitric acid, extending from the line of contact or a little above it for a considerable way up the urine, forming a diffused opacity which, from the closeness of its lower part to the line of contact, might at first be mistaken for albumen. It requires considerable mixing with the acid to dissipate this precipitate, whereas the mucin precipitate produced by the acid itself is so readily soluble in excess that it only appears some distance up in the column of urine. This well-marked precipitate of mucin is therefore not a source of fallacy, but is actually an indication of the presence of an excess of bile salts. If a precipitate of mucin by the acid alone is ever so dense as to be a source of fallacy at all, it must, I think, be extremely seldom.

In doing the test it is necessary to prevent too much mixing of the acid with the urine, and also too much shaking of the urine. If the urine is rendered too acid the reaction will not occur, and, if it is shaken, the precipitate is very readily caused to diffuse through the urine, and so the delicacy of the test is lost. It can be readily done in the ordinary way by running a little nitric acid very carefully down the side of a conical glass after a considerable quantity of urine has been added. I have generally, however, done it by first pouring a little nitric acid into a test tube, and then passing the urine through a piece of filter paper held at the mouth of the slanting tube, so as at the same time to clarify the urine, if that is necessary, and, by letting it run down very gently, to obtain a well-defined line of contact with as little mixing of the two fluids or agitation of the urine as possible. When the test is done the former way the precipitate appears much higher up in the urine than when it is done the latter way, because of the greater diffusion of the acid. If the excessive mixing and

¹ *Bedside Urine Testing*, 3rd ed., pp. 110, 111, and Addendum on Mucin and Bile Salts.

the shaking were avoided the reaction would, I think, be oftener observed.

When we recognise the degree of reaction which may be present without excess of bile salts, we are able by this method to detect with readiness the presence of an excess of these substances. Its use may be illustrated thus:—Two samples of the urine were one day tested in a case of cyclic albuminuria, in which there was found to be a cyclic character in the excretion of the bile salts, as well as in the loss of albumen. Both were almost, if not entirely, free from albumen. On adding a little of the same albuminous urine to each and doing the nitric acid test, the one gave the reaction very distinctly, whereas in the other it was barely perceptible. Then by quantitative estimation it was found that that which gave the distinct reaction contained between three and four times the maximum quantity of bile salts present in health, whereas that which gave the very faint reaction contained considerably less than the normal maximum.

Dr Oliver's method for the quantitative estimation of the bile salts is well suited for special clinical investigation, but it may be doubted whether it can ever be used in ordinary work, as there is considerable difficulty and trouble in obtaining and having always at hand a thoroughly reliable test solution, and as a solution of peptone requiring careful preparation comes to be a matter of some expense. A simple qualitative method for general use, which can be done quickly and without any special apparatus or reagent, is a want which has not yet been supplied.¹ The method here proposed, if found satisfactory, will, I think, meet this want, and it may further prove of service by indicating in what urines it would be desirable to proceed to a quantitative estimation.

VII.—MEDICAL ESSAYS AND REVIEWS.—No. III.

By JOHN BOYD, M.D., Slamannan.

THE native land of *Cinchona* and *Coca Erythroxylon* must to the physician be specially interesting. Notwithstanding the ravages and disasters of the late fratricidal war between Peruano and Chileno, it is reassuring that the light of medical science is continuously fed and fostered in Lima by able and zealous devotees. In proof of this we may cite *El Monitor Medico*, organ of the

¹ The above sentence was written before any account had appeared of Professor Matthew Hay's interesting researches on the subject of the bile acids, in the course of which he has found that they have a remarkable lowering effect on the surface tension of fluids. Taking advantage of this property, Professor Hay has devised a very delicate test for them, apparently so simple and so easily done as to be well fitted for clinical work.

scientific and professional interests of the "Cuerpo Medical," and published under the protection of the "Academia Libre de Medicina de Lima."

On opening the pages of this well printed, attractive-looking periodical, my eye lighted on a heavy-leaded, oblong square, containing the name—

DANIEL A. CARRION.

An explanation of this was afforded in the following number, headed

SECCION EDITORIAL.

Verruga Peruana, by Dr D. José Mariano Macedo. This being translated, goes as follows:—

"This malady, under the eruptive form, has from time immemorial been known as endemic and peculiar to the country. It comes most frequently under our notice in persons who pass from the quebrado de Huarochiri; more especially is it contracted in the place named Verrugas. It has been the popular belief that the waters of this quebrada give origin to the disease. The period of incubation is indeterminate, dating sometimes for a whole year before the cutaneous manifestation of the verruga, after prolonged articular and muscular pains. This malady has not been satisfactorily studied, no physician having as yet been able to follow the course and symptoms of the disease from its initiative to the termination of the specific eruption.

During the formation of the railway of Oroya, along with the alteration of the surface-earth, there appeared a grave pyrexia which could not be included in any known nosological group, presenting peculiar symptoms and alterations. It was therefore named *Oroya fever*, from its locality, and also *anæmia fever*, from anæmia being the most constant and serious symptom.

Opinions have been divided as to origin of this fever, which caused so many deaths among the labourers on this line. Some practitioners, basing their views on the occurring of it simultaneously with the disturbance of the surface-earth, considered it was of miasmatic origin; while others, seeing it appeared in the same localities when verruga was endemic, inclined to the belief that this virus, united or combined with malaria, was the determining cause of *Oroya fever*. Some facts, apparently direct and positive, that the same virus of verruga was that of the Oroya fever led to that conclusion.

The proving of this problem was reserved to our heroic and distinguished compatriot Daniel Carrion, medical student, æt. 26. Along with his devoted self-sacrifice, science has acquired two indisputable facts in the history of the verruga: its transmissibility by inoculation—previously unknown—and the etiological unity

of the verruga and the improperly named fever of Oroya. To deny this coincidence would be to shut our eyes to the logical deduction of the strictest ratiocination.

The facts are:—Carrion, in the most perfect health, with fixed residence in the capital, without the slightest indication of diathesis or infection in his organization, on the 27th August inoculated himself with the blood of a patient with verruga in the atrophic period. On the twenty-second day of inoculation the normal features of this anæmic fever began to show themselves. What, then, was the cause of such grave pyrexia? The data of cause and effect are so clear, positive, and direct, that it would be reckless obstinacy to deny that the drops of verrugous blood which entered into the circulatory current on the twenty-second day developed a series of profound alterations which terminated his existence on the thirty-ninth day of the inoculation. How does it come that in the boy of 14 years with verruga, whose blood supplied the material for inoculation, the disease took a benign course with normal evolution, while the same virus in Carrion was formidable in character and mortal in the end? The cause, we have seen, is the same, but the soil in which the morbid principle germinated was distinct. The organic changes effected in the first are different from those that took place in the second. In the boy the cutaneous eruption fortunately terminated the malady; in Carrion the disoxygenation, deformation, and diminution of the red corpuscles preceding the eruption ended a life that could not survive the profound alterations of the blood."

The Academia Libre de Lima has published an intimation of the basis of a competition for a gold medal and diploma of membership for the best treatise on the Etiology, Pathologic Anatomy, and Geographical Distribution of the Verruga Peruana, which will take place in July 1886. The prize essay will be published in *Boletín de la Academia*, and if spared to receive and translate it, it will, undoubtedly, afford a *bonne bouche* to our Scottish medical public. *El Monitor Medico* includes reports of the discussions held at the various meetings of the Academia Libre, wherein the yellow fever epidemic of Callao, in 1883-84-85, was treated in a business-like style. This disease was considered as imported and not endemic. In the correspondence an important letter appears from Messrs Meyer & Hafemann, who have commenced an extensive manufactory of cocaina at Lima. These gentlemen projected a similar enterprise among the thriving new plantations of cinchona in Bolivia, where 10 per cent. of quinia was attainable from these, but the remarkable reduction of the price of sulphate of quinine in Europe prevented them from carrying it out. They have adopted a process of preparing cocaina identical with that they took with cinchona,—using the fresh leaves on the spot, and not desiccated by a sea voyage. Equal parts of these and calcined lime, with a little tepid water, are left to stand, with

occasional succussions, in a moderate temperature. Mixed with kerosene, it is passed through an apparatus of displacement five times. The kerosene thus charged with alkaloid is shaken with diluted sulphuric acid, and the latter is precipitated by means of caustic soda. They thus attain a yield of 0·5 per cent. of pure cocaine—the most favourable result as yet known.

The clinical reports from the various hospitals, such as that on "Neumonica Alcoholica," by Dr Villar, which, erudite and conclusive, would gratify our temperance advocates,—"*Tétanos Traumático*," by Dr Alarco, etc., etc., are proof sufficient that in Peru medical practice and literature are quite up to the high level of modern medicine in all civilized countries. In each one a table of meteorological observations is officially given by Don E. Guzman y Vale, much on the same lines as we are accustomed to see at home; while under the head of *Démografía* we have monthly reports of marriages, births, and deaths in Lima, which are not a little surprising. For example, in that of August 1885 it is related that 41 espousals took place at Lima, of which 32 were between Peruvians, 6 foreigners with Peruvians, and 3 between strangers; 7 were whites, 17 Indians, 5 mestizos, and the rest different castes. They have one marriage for 2442 of the population. The Peruvians figure 85·56 per cent., and the others 14·54 per cent. The births were 392,—40 above the preceding month, and 82 above the August of 1884. 203 males to 189 females,—158 mestizos, 143 whites, 81 indigenous, and 10 negroes. It is lamentable to add that of the whole 208 were illegitimate, 177 legitimate, and 7 of unknown condition; 9 out of the 10 negroes were bastards; the native Indians were 24 legitimate to 53 illegitimate = 68 per cent.; the mestiza race, 106 illegitimate with 50 legitimate—the first 60 per cent. As befits the higher race, the whites give 172 legitimate for 40 otherwise, or 29 per cent. How can a nation prosper or yield a satisfactory increase when such an exposure of morals, as the above figures represent, is exhibited? In the same month of August 352 deaths occurred—8 more than in July, and 55 above the cipher of the preceding August. Of this loss to the nation, 13 were caused by tetanus of new-born; and attention is called to the dangers of the practices of unauthorized *howdies*, termed *recibedoras*, "who with greater audacity than aptitude cut short at their origin many lives precious to the country." Besides 4 violent deaths—3 shot and 1 opium poisoned—75 were victims to pulmonary tuberculosis, 5 to *tabes mesenterica*, and 4 to tuberculosis meningea, which clearly proves that Lima does not share in the immunity from phthisis said to be enjoyed by the city of Quito, which, however, is perhaps some 9000 feet superior in altitude.

A supplement added to Nos. 10 and 11, entitled *Cirujia Militar*, written by the chief surgeon of the Peruvian army, and principal

editor of the *Monitor Medico*, Dr D. José Casimiro Ulloa, calls forth the reader's serious and sympathetic meditation. In Dr Ulloa's *Informe*, a report to the *Estado Mayor-General* on the *Servicio de Sanidad Militar*, it appears that the unexpected war with Chile found Peru without any express provision for the medical wants of the army or navy. Everything had to be improvised as the struggle went on, and it is needless to say that difficulties and embarrassments crowded in on every side. The attempts made by the civil institution of the Red Cross only served to accentuate the deplorable deficiencies to be encountered; and full powers being confided by the Chief of the State to the Surgeon-in-chief, he set himself to work to organize a system of ambulances with medical and administrative staffs, utilizing a large number of young civil practitioners to whom the opportunity of enriching their professional attainments by ample field experiences was soon afforded. Commissioners were charged with the supervision of the hygiene of the camps and the hospitalization of the troops; the alimentation and clothing of the soldiers, the attention to potable water, etc., etc., were the subjects of numerous memoirs and weekly discussions reported to him. Dr Ulloa took full charge of the men's hospital, Santa Sofia, which soon was in condition to benefit the wounded of the brilliant battles of Tacna and Arica on the 20th May and 6th June 1880. The blockade of Callao was established by the Chilean fleet on the 10th of April, in view of which the country house of Villegas, being gratuitously placed at the disposal of the Government by its owner Señor Meiggs, was converted into an hospital, with above seventy beds, and filled with an immense amount of all kinds of hospital material, and was of the utmost advantage to the end of the war. The surgeon-general arranged to have two ambulance services and field hospitals attached to each army. Notwithstanding all his efforts, however, he found the most deplorable difficulty, and insufficiency in the means of transport and in lack of zeal and energy in the administration; the medical department suffering from the poverty of the national exchequer, although the providers of the medical and surgical material manifested great patriotism and self-abnegation. In the last campaign it was impossible to station or move the ambulances with sufficient celerity, in consequence of which a large portion of their material fell into the hands of the enemy, who, notwithstanding their promised adhesion to the Geneva Convention, took possession of these, as well as all other material of war. In spite of these inconveniences, the Junta Central of Civil Ambulances having ceded them to the *Sanidad Militar*, the latter was able to supply the necessities of our armies, as was shown on the field of battle at San Juan, Chorillos, and Miraflores, wherein an immense number of wounded, Chilenos as well as Peruvians, were adequately assisted and transferred to the civil and military hospitals of Lima. Besides this, a

vast amount of hospital and pharmaceutical material was sent south to the second army stationed at Arequipa for the Bolivian as well as for the Peruvian sick and wounded. This was confided to the Bolivian Dr D. Demetrio Quint, whose efforts, however, did not correspond to the confidence placed in him by the Supreme Government.

According to the *Decreto Organico* of 16th February 1880, each army should be provided with one hundred *enfermeros militares* drawn from the different branches of the service; but military exigencies recalled these to the ranks on active service. Hence those of the reserves had to be called up, and during battle the army musicians had to act as transport-bearers of the wounded,—all which, however, was latterly insufficient, as many had to exert themselves beyond their strength.

To meet this emergency the Surgeon-in-chief, with the approval of the Government, instituted a series of rules entitled *Reglamento del Servicio*, to meet the ordinary and extraordinary medical exigencies of the armies—those incident to the campaign and those of the wounded in battle—with such good effect that the health of the troops was most satisfactory, the percentage of invalids descending from 10 per cent. to 5, and ultimately to 2 per cent. A great number of the recruits came from the Department of Junin, where in some of the provinces an epidemic of typhus prevailed. It did not spread, however, at the camp of instruction at Canto Grande; and most of the conscripts being unacclimatized men from the mountains, brought down to the coast during the most unfavourable season, their general health and efficiency placed the management of Dr Ulloa in a very gratifying light.

The lack of transport for the ambulances was the occasion of some 2000 “paquetes de primera cura” not being available by the wounded, and the antiseptic materials for Listerism were not ready in time for the battles of San Juan and Chorillos. This does not detract, however, from the credit due to the patriotic committee of Lima ladies who exerted themselves so strenuously to supply the medical and surgical wants of the sick and hurt, prominent among whom were Mrs Hezoos Iturbide, Mrs Manuela Orbegosa, Mrs Rosano Cardenas, and others.

VIII.—INTERNAL DERANGEMENTS OF THE KNEE-JOINT.

By W. SCOTT LANG, M.D., F.R.C.S.E.

THIS title has been selected, because it is comprehensive enough to include all the derangements to be referred to in this paper. “Hey’s Internal Derangement of the Knee-Joint” is the title commonly used, and is only avoided because it is apt to mislead, and to give the impression that there is only one particular form

of internal derangement of the knee-joint, whereas Hey himself used it in an indefinite and comprehensive sense.

Internal derangements of the knee-joint may be divided into several well-marked varieties, having different features both as regards their clinical aspect and their pathological anatomy. Dislocations of the patella, and loose bodies in the joint, will not be here discussed; and the cases to be considered may at once be designated as *luxations and subluxations of the semilunar fibro-cartilages of the knee-joint*.

The first allusion to these derangements is generally credited to William Hey of Leeds; and a somewhat lengthy reference is made to them, from a clinical point of view, in his *Practical Observations on Surgery*, 1810, p. 332, second edition. This is followed up by Smith of Leeds, who makes further reference to them and to Hey's writings in a clinical lecture published in the *Lancet*, 16th September 1851. Reference is also made to them by Vincent, *Observations on Surgical Practice*, 1847, p. 75. But these works, as well as the more modern and standard works on Surgery, make no attempt to state the exact nature of the lesion, or the various forms of lesion which may occur, and their differential diagnosis. Consequently their treatment in a rational manner has not been taught, and a field has been left for the notorious "bone-setter" to exert himself in, which he has doubtless done with more or less success, at least from a pecuniary point of view.

These luxations may be classified as follows:—They may be of the *internal* or of the *external* semilunar cartilage, and they may be *complete* or *incomplete*. This method gives us four distinct varieties; and although no doubt obscure and complicated cases may arise, such are quite exceptional, and the writer has been unable to find any record of a case in which there was simultaneous luxation of *both* cartilages. By complete luxation is meant a total escape of the semilunar fibro-cartilage from under its respective femoral condyle,—the articulating part of the femoral condyle, so to speak, escapes altogether from the socket formed for it by the cartilage.

The clinical cases which the writer has had an opportunity of studying and watching have—with one important exception (perhaps two)—been connected with the internal cartilage, and this is quite in accordance with the usual statement found in writings on the subject, viz., "that the internal cartilage is nearly always the one affected." In fact, Vincent, in his work alluded to above, states that in *all* the cases he had seen the internal cartilage was the one affected. Sir A. Cooper also states (*Surgical Dictionary*), "It is almost invariably the internal cartilage which is affected." It cannot be doubted, however, that there are cases in which the external cartilage alone is affected. No reliable figures are obtainable regarding the relatively greater frequency of cases where the internal cartilage is the one concerned.

The *internal cartilage* will be first considered. Complete luxation of this cartilage would appear, from its greater size, to be almost an impossibility without at the same time involving a serious rupture of the internal lateral ligament of the knee-joint, and possibly also a dislocation of bone. The writer has been unable to find any clinical or pathological account of such an occurrence, but there is a doubtful case described by Sir W. Fergusson, *Practical Surgery*, fifth edition, p. 323. It was observed in the dissecting-room, and is described in the following words:—"One of *these* cartilages had been torn from its connexion with the tibia throughout its whole length with the exception of its extremities, so that, during flexion and extension, it must have occasionally slipped behind the articular surfaces." Unfortunately, Sir W. Fergusson does not state whether it was the internal or the external cartilage which was thus affected, but it was most probably the external one; for the pathological account here given corresponds in a remarkable manner with some clinical cases to be afterwards alluded to.

Partial Luxation of Internal Cartilage.—Of all these internal derangements of the knee-joint this is the most common form, and the reason why it is the lesion most frequently met with will be afterwards considered. It is the lesion which has occurred to the writer in his own person, and several other well-marked cases have come under his observation. Most of these other cases occurred in students of medicine, now practitioners, who could be thoroughly relied on for accurate accounts of their cases.

The lesion occurs at the anterior part of the cartilage, and the diagnosis of the condition is generally easy. There is a history of violence. The violence, however, may be slight. An exact history of the nature of the violence, and the direction in which it was applied, will not be often obtainable. It may occur from prolonged kneeling and suddenly attempting to straighten the limb, or it may occur by striking the foot against a stone when the toe is turned outwards. The limb must always be more or less flexed. It cannot possibly occur when the limb is extended and rigid.

Symptoms.—The knee is kept in a semi-flexed position, and there is *inability to completely extend it*. There will probably be pain on pressure over the superior margin of the inner tuberosity of the tibia, especially if improper attempts have been made to extend the limb forcibly. On attempting to extend the limb, an irregular prominence will be felt to appear between the internal condyle and the head of the tibia, about $1\frac{1}{2}$ inch internal to the inner border of the ligamentum patellæ. Attempts to extend the limb cause severe pain at this spot, and a painful sensation as if something were being jammed between the opposing bony surfaces. It feels as if a sort of wedge were being put under the internal condyle as it attempts to roll forward on the tibia in extension. Flexion is not interfered with. The rounded margin of the semi-

lunar cartilage can be felt to project unduly on the inner aspect of the joint. (Even in a perfectly sound knee, the rounded margin of the internal semilunar cartilage can be felt on the head of the tibia, and it can be distinctly felt to recede when the knee is flexed, and to come forward on extension on the antero-internal aspect of the joint.)

Although the authors already quoted make no attempt to differentiate these internal derangements of the knee-joint, they had evidently met with cases similar to the one above described, for Hey writes, *op. cit.*, p. 332 *et seq.*,—"The patient himself cannot freely bend, nor perfectly extend the limb in walking." And Smith, in *Lancet*, 20th September 1851, writes still more pointedly,—"In consequence of some slight fall, slip, or sprain, the mechanism of the knee-joint becomes so far deranged that the full extension of the limb is rendered impossible." Sir A. Cooper also writes (*Surgical Dictionary*),—"The patient becomes incapable of perfectly extending the leg. There may be no pain at the instant the accident occurs, so long as no attempt is made at complete extension." Hey refers to luxations of both the internal and external cartilages, and had met with cases of each variety; but the two latter quotations evidently point to a luxation of the anterior part of the internal semilunar cartilage.

In *Lancet*, 1855, vol. i. p. 448, Mr Syme describes a case, and confirms Hey's observation, but he does not say whether the internal or external cartilage was the one affected. Again, in *Lancet*, 1856, vol. i. p. 11, Mr W. T. White describes a case which was evidently a subluxation of the internal semilunar cartilage, for it corresponds closely with the description of a typical case already given both as to causation and symptoms. It is unnecessary, therefore, to multiply clinical cases which all closely resemble each other when the "derangement" is of that particular variety now under consideration. It has been stated that this partial luxation of the internal semilunar cartilage is the most common form of internal derangement of the knee-joint, and it has also been stated incidentally that the lesion occurs at the anterior part of the cartilage. The explanation of these two circumstances is to be found in the anatomy and mechanism of the parts involved, and it will be convenient to consider both the semilunar cartilages at the same time.

In descriptions of the anatomy of the knee-joint it will sometimes be found loosely stated that the semilunar cartilages are fixed on the top of the tibia; but we find in Goodsir, *Anatomical Memoirs*, vol. ii. p. 227, "The external semilunar cartilage must be viewed as an appendage to the external condyle of the femur, with which it moves backwards in flexion, forwards in extension. The internal semilunar fibro-cartilage, again, must be regarded as an appendage to the internal condyle of the tibia. It resembles a curved, yielding, but elastic railway on the upper

surface of the inner condyle of the tibia, along which the corresponding condyle of the femur rolls backwards and forwards." Both the cartilages are, however, fixed firmly to the tibia by their cornua, and might be regarded as altering their shapes and positions to receive the condyles of the femur somewhat in the manner in which an ellipse is formed by a piece of cord or an elastic band fixed at two points. The nearer the points of attachment the greater will be the range of movement; and Goodsir states, p. 227, that the movements of the external cartilage "are facilitated by its circular form and the approximation of its horns." The cornua of the internal cartilage are more widely separated, and its range of movement consequently less. Both the semilunar cartilages are maintained in position by the coronary ligaments, and these ligaments are more or less elastic, and also slack to allow greater range of movement. The capsular ligament itself follows these movements to some extent, for the coronary ligaments are neither very long nor very elastic, and the most superficial examination of the knee-joint, in life, shows us that the anterior portion of the capsular ligament falls back in flexion and comes forward in extension of the joint, following the movement of the rim of the semilunar cartilage. The coronary ligament of the external cartilage has a break in it where it is pierced by the tendon of the popliteus muscle. This is a weak spot, and probably accounts for the predisposition to luxation of the external semilunar cartilage to be afterwards described.

When the knee is flexed, the surfaces of the femoral condyles in contact with the tibia are portions of arcs of smaller circles than the anterior portions of the condyles which are in contact with the tibia in extension. In extension, then, the larger bony arcs more completely fill up and fit into the sockets formed by the semilunar cartilages, and so increase the strength and rigidity of the limb. Both the cornua of the external fibro-cartilage are firmly fixed into the head of the tibia, and the posterior cornu also sends an extra slip of attachment to the posterior crucial ligament. The internal fibro-cartilage has also two horns firmly fixed into the head of the tibia, but its anterior horn is very variable. It is sometimes found that a considerable portion of the substance of the anterior part of the internal cartilage is directly continuous with the transverse ligament, and that the portion of it fixed into the tibia is small.

Works on descriptive anatomy state that the transverse ligament is very variable in size and strength (Gray, Heath), and in proportion as it may vary in size and strength so will the anterior cornu of the internal semilunar cartilage vary inversely. The outer end of the transverse ligament has only a weak and ill-defined attachment to the capsule of the joint and coronary ligament of the opposite side. The so-called alar ligaments are much more important than might be supposed from the usual anatomical

descriptions. They are, as is usually stated, in the position of fringes to the ligamentum mucosum, but in many cases they will be found to be distinctly hard and cartilaginous, and, although variable in size and consistency, they will always be found to be introduced between the femoral condyles and the anterior portion of the semilunar fibro-cartilages in complete extension of the joint in a sound knee. This can be readily seen upon opening the joint by cutting along the inferior margin of the patella, throwing forward the capsular ligament, and noting the positions assumed by the alar ligaments when the joint is flexed and extended. It can also be more completely demonstrated by making an oblique vertical section through the internal condyle when the joint is completely extended.

Two opened knee-joints are submitted herewith, one of which shows both the alar pads well marked, but the internal one is the larger. The other preparation shows the internal semilunar cartilage somewhat deficient at its anterior part, and this deficiency is evidently compensated for by a large cartilaginous pad. The word "pad" is here used, as that would seem more correctly to indicate the function of these structures (Goodsir). The internal alar pad is larger than the external (the latter being frequently absent), and in complete extension of the joint is found to be introduced to the extent of about half an inch between the internal condyle of the femur and the corresponding portion of the internal semilunar cartilage. This is a point in the mechanism which seems to have escaped observation, and although apparently trivial, it must add considerably to the complexity and delicacy of the movements necessary to completely extend the limb.

This variability of the size and strength of the transverse ligament, the alar pads, and even the internal fibro-cartilage itself, will probably account for the fact that a luxation or subluxation at this point is more readily produced in some knees than in others, for it cannot be doubted that although a small amount of violence may produce a permanently recurring subluxation in one knee, the same violence in nature and amount might have no marked effect on another knee. In short, that natural variations regulate predisposition, and such variations must always interfere with the absolute exactness of surgery.

From the researches made by himself and several German anatomists into the mechanism of the knee-joint, Goodsir concluded that its movements were like those of a "double-threaded conical screw"—the spine of the tibia, etc., being the cone (the tap), and the lower end of the femur being the hollow receiver (comparable to a candle-extinguisher, but much shallower or flatter), the nut or die. The great rigidity of the limb in complete extension is attained by the conical tap being screwed home into the receiver or nut, with a simultaneous tightening of all the ligaments. In completing extension, the left tibia performs the movement of a

right-handed screw, and the right tibia that of a left-handed screw. In order to *initiate flexion*, the opposite rotatory movement is necessary in each case. But, supposing the leg and foot to be held fixed, then, in order to complete extension, a rotatory movement of the femur *inwards* will be observed to take place, and this rotatory movement takes place, in the words of the late Professor Goodsir, "round the oblique curvature or anterior third of the internal femoral condyle."

The passage is as follows (*Anatomical Memoirs*, vol. ii. pp. 221-2):—"In the first third of flexion and in the latter third of extension, the movements of the femur and tibia take place round the oblique curvature or anterior third of the internal femoral condyle, and involve, in addition to the completion of extension and commencement of flexion, a movement of rotation of the tibia, and consequently of the leg and foot, inwards in flexion and outwards in extension. These remarkable movements of rotation inwards and outwards, *inseparable from the commencement of flexion and the completion of extension*, take place round the axis of an ideal cone, which axis is directed at an angle of 45° downwards, outwards, and backwards in front of the spine of the tibia—the oblique axis of the knee-joint."

Besides the anatomical points already referred to, there will be noticed at the anterior extremity of the external femoral condyle a flattening or depression, frequently very distinct, which receives the external cartilaginous surface of the spine of the tibia, and the *external* condyle of the femur partly glides inwards, partly rotates as on a pivot, while the *internal* condyle is passing through the movement of rotation upon an oblique axis, inseparable from complete extension of the joint. This movement is well seen by sawing into the intercondyloid fossa from above the external condyle, and, after having removed the rest of the femur, observing the movements of the external condyle on completing extension while the leg and foot are held fixed.

The *unlocking* (rotation inwards of the tibia) which is necessary to initiate flexion is arranged for by the peculiar mode of insertion of the semitendinosus, gracilis, and sartorius muscles, as pointed out by Goodsir and other anatomists. It seems probable that the popliteus muscle may act on the external condyle of the femur in a similar manner to produce this unlocking, and initiate flexion in the event of the tibia being held fixed, for the tendon of the popliteus is tense, and ready for action only when the joint is fully extended, and thus is in a position to unlock the joint by pulling upon the external condyle and rotating the femur *outwards*.

Goodsir further points out that a movement, the reverse of this rotation, takes place towards the *completion of flexion*, in which the leg and foot rotate inwards; and further, *op. cit.*, p. 242, "The movements round the anterior combination are more extensive

and important than those round the posterior, and, in the ordinary use of the joint, are alone employed."

A remarkable clue is here furnished to explain the great liability of the knee-joint to this particular derangement, *of which the most prominent clinical feature is that there is "inability to completely extend the limb,"* and the surgeons who first pointed this out wrote before the researches of Goodsir were published, and probably without any knowledge of the delicate and complicated mechanism involved in the movement of complete extension.

It was about the year 1855 that Goodsir first made public an account of his investigations, by which he showed that in completing extension the tibia performed a movement of rotation round an oblique axis, and was "screwed home" into the femur, which receives it as a nut or die receives a conical tap.

Besides the well-known oblique portion at the anterior part of the internal condyle of the femur, the other structures concerned in completing extension in relation to it are,—the anterior part of the intercondyloid spine of the tibia, the anterior attachment of the anterior crucial ligament, the internal alar pad, and the anterior portion of the internal semilunar cartilage, held in its place by the coronary ligament and transverse ligament when present.

Here, then, merely from a consideration of the anatomy, the mechanism, and the "ordinary use of the joint," explanation is furnished as to why "internal derangement" occurs most frequently in connexion with the internal cartilage, and also why it occurs at its anterior end.

Before proceeding to investigate the immediate cause and exact pathology of these derangements, exception must be taken to the statement in a popular work upon Surgery, which says, in endeavouring to account for them, "that the attachments of the semilunar cartilages must have been previously stretched by inflammation of the joint, and their own substance enlarged so as to increase their prominence" (Holmes). This statement is mere conjecture, quite unsupported by evidence, and numerous cases go to disprove it. There is no reason why the accident should not take place in a perfectly healthy joint, but the natural variations met with in the ligaments, etc., already alluded to, will increase or lessen the liability to the disorder.

(To be continued.)

IX.—CLINICAL AND PATHOLOGICAL MEMORANDA.

By BYROM BRAMWELL, M.D., F.R.C.P. (Edin.), Assistant Physician to the Edinburgh Royal Infirmary; Lecturer on the Principles and Practice of Medicine, and on Practical Medicine and Medical Diagnosis in the Extra-Academical School of Medicine, Edinburgh; Additional Examiner in Clinical Medicine in the University of Edinburgh, etc.

X.—*Out-Patient Practice: Mode of Conducting: its Difficulties, Advantages, and Disadvantages as a field for Clinical Teaching and Original Observation.*¹

IN commencing the work of another session in the out-patient department of this Infirmary it may perhaps be well for me to make a few remarks with regard to the manner in which I think it advisable to conduct this clinique, and to put before you some of the advantages which out-patient practice affords for clinical teaching.

I must premise what I have to say by stating that the objects which the physician ought to have in view in conducting out-patient practice in a large teaching hospital such as this are, in my opinion, threefold.

In the *first place*, he has to determine what is the matter with the patients; to send to the hospital wards those cases which are suitable, and which desire to be admitted; to prescribe for those cases which are not fitted for admission, or which do not wish to come into the hospital, and to give them directions as to their diet, hygienic surroundings, and mode of life generally; in short, to advise them as to what they should do and what they should not do, in order that they may be cured or relieved of the diseases with which they are affected.

In the *second place*, he should utilize to the utmost the very great advantages which the out-patient department affords as a field for clinical instruction. This I hold to be a most important point in this great school, where the number of students is so large in proportion to the number of in-patients. The teaching must, however, always be considered as secondary and subordinate to the examination and treatment of the patients; and the greatest care must be taken that the teaching is judiciously conducted, and that no patient is subjected to a prolonged examination who is in the least likely to be injuriously affected by it.

In the *third place*, he should endeavour, so far as opportunity allows, to make original observations, and to do what he can to advance the science and practice of medicine.

Method of Conducting.—Now, to satisfactorily accomplish all three objects at the same time is by no means easy. The method

¹ Being introductory remarks made at the author's out-patient clinique at the commencement of the Winter Session 1886-87.

which I adopt—and it seems to me the only one which is capable in any satisfactory degree of meeting all the requirements of the case—is as follows:—As each patient is admitted to this large room, I ask him to take a seat in front of me, the students being seated or standing in a semicircle round us. I then ask him his name, age, occupation, and address, his answer to these preliminary questions being copied by a clinical clerk into the Hospital Register, while I myself enter them in my private notebook.¹

At this stage of the examination I take care to direct attention to the physiognomy of the case; in short, to point out any striking external appearances which may be present. You will soon see the immense importance of this kind of information, and will soon come to appreciate the advantage and necessity of minutely observing every particular connected with the patient (facial appearances and expression, colour, state of nutrition, condition of breathing, tone of voice, manner, bearing, etc.)

You will find that in some cases it is possible, even before the patient has been asked a single question, to come to a positive conclusion as to the nature of the disease from which he is suffering; while in most cases the impression which the physician receives from the physiognomy of the case, or the *tout ensemble* of the patient, suggests the line of investigation which should be followed and the questions which should be put; in short, directs the whole plan and scope of the examination. Even when I do not tell you in so many words the suggestions I have received from the physiognomy of the case, you will soon perceive them from the nature of the questions which I put to the patient.

A knowledge of the physiognomy of disease; in other words, a knowledge of those alterations in the external appearance, gait, voice, manner, etc., of the patient, which are associated with different diseased conditions of internal organs, and the training of the faculty of rapidly and accurately noting every minute particular which can possibly throw any light upon the pathological condition of the patient and the nature and extent of the disease from which he is suffering, are better acquired in the out-patient department than in the wards, where the patients are usually seen in bed; and I need not say that you will find this kind of knowledge of the utmost value in your future practice.

I next ask the patient to specify the nature of his complaints, question and cross-question him with regard to his symptoms, and elicit any points in his previous history or hereditary tendencies which may appear to have a necessary or important bearing upon his present condition.

¹ I find it advisable to devote two clear pages to each case. Even should nothing else be entered than the preliminary particulars just mentioned, and a few words descriptive of the case, it is, I find, better to pass on to the next page, and to sacrifice a little paper, rather than to run the risk of confusing and jumbling up the records of two cases, and of being hampered for want of space when the notes of the case come to be filled up.

In making this, the oral examination, I do not rigidly adhere to any hard and fast rules, but alter the plan of my examination as the requirements of each individual case seem to demand. My object is to get all the necessary and leading facts in as little time and with as few questions as possible. Each question which is put has its point. By following this part of the examination you will learn the method of conducting the oral examination, and will get valuable hints as to the different modes of eliciting information and of dealing with patients of different temperaments. During the whole time of the oral examination I keep up a running commentary, and do not hesitate to enter into a detailed discussion of the symptoms whenever it seems necessary or desirable to do so.

When this part of the examination is completed I take care to point out the direction in which the symptoms point; to tell you the probable nature of the case, the organ which seems to be affected, and the points to which attention should be directed in making the physical examination.

I then direct the patient to go into the male or female side-room (as the case may be), and to take off his or her clothes. Suppose, for instance, that the patient is a male, and there is reason to suspect disease in the thorax or abdomen, he is made to go into the male side-room and strip to the waist; if there is reason to suspect disease of the spinal cord or lower extremities, to strip below the waist. Male patients and children are always brought back into the large room and examined before the students. (A high bed is placed in the centre of this room for this purpose.) Owing to the somewhat inconvenient arrangement of the female side-room (it does not directly communicate with the large room in which the clinique is held, but through the passage by which all the patients are admitted from the general waiting-room) it is not always possible to carry out the same plan in the case of females.

While the patient is undressing I either continue my remarks on the case, or, if I have said all that is necessary, call in another patient for examination.

When the patient is undressed, he is brought into the large room, and the physical examination is made before the students. Any alterations in the physical signs which can be made apparent to the class (such as visible jerking pulsation in the brachial arteries, capillary pulsation on the forehead, the condition of the reflexes, marked alterations in the percussion note on the two sides of the thorax, etc.) are always carefully demonstrated; and other physical signs which can only be perceived by personal observation, such as the presence of cardiac thrills and murmurs, are carefully described. The urine is examined in all cases in which there is reason to suspect the presence of albumen, sugar, etc.; the microscopical characters of the blood, the electrical condition of the muscles, the sphygmographic characters of the pulse, and the cardiographic

characters of the heart-beat, are occasionally demonstrated in those cases in which there is reason to suspect any marked departure from the normal. The black-board is called into frequent requisition, and is found a most valuable aid to clinical teaching.

The significance of the physical signs is then discussed; and the diagnosis and differential diagnosis fully considered.

The patient is then sent into the side-room, and *provided that there is no risk of his being injuriously affected by further examination*, he is there percussed, auscultated, or otherwise examined by any member of the class who may wish to verify the facts which have been previously elicited.

While the patient is in the side-room the prognosis and treatment are considered. Finally, after he is dressed, he is again brought before the students. If he desires to be admitted to the Hospital he is sent to the wards. If he does not wish to come into the Infirmary, as much of the opinion which has been formed as it may seem advisable, is communicated to him; he is instructed as to diet, mode of life, etc., and is handed a prescription which has been previously dictated to a clinical clerk.

In cases of severe illness, the extent of the examination is reduced to a minimum, and the patient is immediately sent on to the wards; or, when he does not wish to come into the Hospital, prescribed for and dismissed with as little delay as possible.

During the course of the oral and physical examination, I enter in my private notebook the leading particulars of each case, and any definite facts (such as measurements, pulse rate, etc.) which it would be difficult to remember. The notes are afterwards filled in from memory, and the case, so far as possible, completed. Personally I find no difficulty, with the aid of such brief notes as I make during the course of the examination, in remembering for a few hours all the leading details of each individual case. I endeavour to fill in the notes as soon as possible after the clinique, and I always make a point of completing the record the same night.

The method of conducting the out-patient clinique, which I have just described, is the best which I have been able to devise for attaining the threefold object which I have in view, in the presence of a large audience. With a limited number of students it would be possible—though, for the reasons which will presently be mentioned when I come to speak of the class of students for whom out-patient practice is best fitted, I am not at all convinced that it would be better—to allow each student in turn to auscultate and percuss the patient under the eye of the physician; in fact, to conduct the clinique more as a tutorial class. With the number of students who usually attend here, such a method of procedure is quite impossible. We must necessarily adopt that method which gives the best results to the many rather than a method which would perhaps be most advantageous to the few. Let me add, that it is essential that every one should maintain absolute

silence. The slightest whispering not only distracts my attention and prevents me carrying out the examination—more especially the auscultation—in a satisfactory manner, but it interferes with your comfort, takes your attention away from the matter in hand, and makes it impossible for every one in the room to see, hear, and appreciate all the minute and fine details of the case. I find, too, that if absolute silence is to be maintained for two or three hours on the stretch, that your attention must be kept on the *qui vive*, and your interest constantly excited. It is for this reason that I am continually talking and demonstrating, and that I endeavour to make the whole examination before you. If I have to go into the side-room to make an ophthalmoscopic examination or to examine a female patient, my assistant takes my place, a new case is called in, and the work is never for a moment allowed to flag or falter.

Difficulties and disadvantages of Out-patient Practice; Mistakes.—One of the difficulties which we have to contend with in out-patient practice is the number of patients who come for advice. On the days when I attend (Wednesdays and Saturdays) the work is not, as a rule, so heavy as it is on the earlier days of the week. The number of new cases which I have had to see during the past six months, has usually been from sixteen to twenty per day, and I find that I can generally get through the work—going pretty thoroughly into the cases, in the manner I have just described, and at the same time doing a considerable amount of teaching—in three hours. It is, however, hard work. One's attention has to be constantly on the stretch; and from the fact that so much work has to be done in such a short time, it necessarily happens that important facts are sometimes not elicited, and that there are some mistakes. I think, however, you will find that, as a rule, the examination is tolerably complete; and I trust that those of you who follow the cases up in the wards—and let me strongly advise you to take every opportunity of doing so—will find that the mistakes which do occur are those of omission rather than of commission. And here let me say that no one is infallible, but that every one makes mistakes. If it were possible to imagine any one who professed never to make a mistake, he would either be a fool or a liar, for he would either be so ignorant that he would not recognise his mistakes, or knowing his mistakes, he would wilfully conceal them. As you pass through life you will, I think, generally find that the men who are least candid about their mistakes, and most anxious to conceal them, are usually those who make the most. From the intricate nature of the problems with which we have to deal, and the difficulties which, in many cases, attend the investigation of disease, the most able and experienced practitioners must necessarily make mistakes. It is not a question of who makes and of who does not make, but simply of who makes the fewest mistakes. But there are mistakes and mistakes.

There are the mistakes of commission—the bad mistakes, as we

may term them—mistakes which show gross ignorance, incompetence, or culpable negligence; as, for example, the inability, after careful examination, to detect striking clinical facts, such as marked alterations in the physical signs.

Then there are the milder mistakes—those of omission, which are often due to imperfect or hasty examination, and which are especially liable to occur to the overwrought practitioner and in the hurry of out-patient practice.

Lastly, there are mistakes due to errors in judgment—the mildest mistakes of all—as, for example, those mistakes which are due to an erroneous estimate being attached to certain facts (too much importance to some, too little to others); or, when the relative importance of the different facts is correctly estimated, to an erroneous or illogical conclusion being drawn from them. Mistakes of this kind (errors of judgment) are exceedingly common in practice; nor is this to be wondered at, when it is remembered that there is probably no faculty of the human mind which differs more in different individuals than the faculty of judgment—the power of being able to weigh correctly all the facts of a case, and of drawing the correct and logical conclusion from them. Like every other mental faculty, this power of judgment can fortunately be cultivated—for this, amongst other reasons, a thorough mathematical training is, in my opinion, so eminently desirable for boys who intend to take up medicine or science as a profession.

On account of the enormous extent of modern medicine, the difficulty that there is in some cases of eliciting the facts of the case and of making a thorough and satisfactory examination, the extreme complexity of many of the problems which the physician has to decide, and the natural imperfections which are inherent in every human mind, it necessarily follows that mistakes must arise. But we may take comfort in remembering that there is nothing so instructive, to the man who makes it, as a mistake; this is one of the reasons why the tutorial system of teaching by question and answer is so eminently helpful. Now, like yourselves, I am simply a student; one of the main objects which I have in view in giving the amount of time and trouble that I do to this out-patient work is to learn and to teach myself; and although I dislike quite as much as any man to be found making a mistake, yet I am always anxious to know when I do fall into error or make a slip. When, therefore, any of you think that I am making a misstatement or a mistake, I shall always be obliged if you will point it out. For the same reason, if there is anything I fail to explain to your satisfaction or to make quite clear, by all means question me about it. I am no advocate of *ex cathedra* teaching. I only regret that the time at our disposal and the amount of work which we have to get through makes it impossible to enter into long discussions—a mode of teaching senior students which I used so thoroughly to enjoy in the wards of the Newcastle Infirmary.

Physiognomic Diagnosis.—And this leads me to say, that you may perhaps sometimes think that I jump at conclusions, or arrive intuitively at results. After looking at the patient, and perhaps asking him one or two questions, I will often tell you that he is *probably* suffering—sometimes I may even go the length of saying that he is actually suffering—from some particular affection. Now there is nothing miraculous and intuitive about this; it is a process which every practitioner is constantly carrying out; although he may appear to the uninitiated to arrive intuitively and almost miraculously at the result, it is simply a matter of experience and observation. It is perfectly true that the process of thought is almost instantaneous; that the process of reasoning by which he arrives at his result is, in many cases, carried on quite unconsciously; and that he may actually, in some cases at all events, find it difficult to explain all the steps in the process; yet he ought to be able to unfold, more or less clearly, the whole process and chain of thought. If he cannot explain the grounds of his opinion, he is, you may be quite sure, in many cases at all events, simply making a guess. However eminent the practitioner, however emphatically his opinion may be expressed, I should, speaking generally, hesitate to attach any great importance to it, unless he is able to explain the grounds of his opinion and the reasons which have induced him to arrive at his result. There are, doubtless, some exceptions due to the facts that it is often very difficult to analyze our mental processes and to give the grounds for our conclusions, and that some men have more difficulty in making this sort of mental retrospection and mental analysis than others. Let me make my meaning clear by means of an illustration. Those of you who attend my practice here know that I can generally recognise a pitman the moment he sits down before me, and before a single question has been asked. Only a week ago, those of you who were up during the vacation will remember, I asked a patient whether he was a pitman? he said No, he was a joiner; but I felt so sure of my conclusion that I then asked him if he had not been a pitman. He then stated that he had followed his present occupation for three years, but before that he had all his life worked down the pit. This conclusion was simply the result of experience and observation. In my work at the Newcastle Infirmary I saw a great many pitmen. They are seldom tall, generally muscular and strongly built, but pale in the face from working under ground away from the light; when they come to a physician, they often do so because of some chest complaint (bronchitis, asthma, phthisis), evidence of which may frequently be seen at a glance (emaciation, slight dyspnoea, cough, barrel-shaped thorax, etc.); their dress is certainly peculiar—I am, of course, speaking of recognising pitmen who are washed and clothed in their Sunday rig-out—the necktie, and the manner it is tied, are, I think, the most important points, and often, quite irrespective of anything else,

suggest to me, I think, that the patient is a pitman. Well, when I am led to suspect, by observing these points, that the patient is a pitman, I almost unconsciously and instinctively, as it were glance at his hands; if I see any blue marks (the hands must be placed in a good light, for these marks are often small and difficult to see at a distance) I feel sure of my conclusion, for these blue marks,—which may frequently also be seen on the face, and on other parts of the body when the patient is stripped, and which are the result of coal-dust getting into cuts and scratches and becoming tattooed, as it were, into the skin, are highly characteristic.

Now, to be able to recognise a pitman at a glance is of no importance whatever, for the fact could be much more certainly and quite as easily ascertained by a single question; but it illustrates the most important fact, which I cannot too strongly impress upon you, viz., that long experience and minute observation enable any one of average ability to arrive at conclusions which, to the uninitiated, appear little short of miraculous; and when I further tell you, in the eloquent words of Professor Gairdner, that “the experience of years and the critical appreciation of the human form under a great variety of conditions, normal and abnormal, gives the physician, in many cases, a power akin to the artist, incommunicable by words,—an instinct of divination, so to speak, by which the true character and history of the organism may be read in the external features and physical characteristics,—and this not only as to health and disease, but as to all the leading elements of character,” you will see the immense importance of cultivating to the very utmost this faculty of observation, and of making yourselves familiar with those external alterations and characteristics with which disease of the internal organs is so frequently associated.

Deferred Diagnosis.—You will sometimes find that, after the most careful and prolonged examination, I am unable to arrive at a positive conclusion as to the nature of the case, and that I defer the diagnosis, and leave the matter in doubt. In such cases I always endeavour to carry the diagnosis as far as possible, and to explain to you the reasons for my hesitation and doubt. This is a procedure which every practitioner now and again adopts. In some cases the facts are not sufficient to warrant a conclusion; in others, although sufficient facts are in reality present, yet their observation is attended with so much difficulty, or the case is so complex, that it is desirable before committing one's self to a final opinion to examine the patient again and again, and to take time to think over the case.

I repeat this is a truly scientific method of procedure, which every one who wishes to arrive at the best possible conclusion must occasionally adopt. On first entering practice you will, of course, be frequently in doubt, and until you have thoroughly acquired the confidence of your patients you may feel some diffi-

culty in telling them when they ask for your opinion, as they usually will do, that you are unable to form a positive opinion as to the nature of the case, for you naturally may think that they will attribute your hesitation and doubt, not to the intrinsic difficulties of the case, but to want of experience and knowledge, and, no doubt, in some cases they would be correct. Tact and ingenuity enable some men to get out of the dilemma, but you will, I think, generally find that the straightforward course is in the end the best. Sensible and intelligent people will seldom be dissatisfied if you tell them the case is one of difficulty, and that you think it necessary, before making up your mind as to its exact nature, to take time for consideration and further observation. Once you have gained the confidence of your patients and acquired a certain reputation, there is no need to hesitate as to the course you should adopt.

Let me give you an illustration of the kind of case in which it is necessary to defer the exact diagnosis. A patient comes before us, we will suppose, with symptoms of intra-thoracic pressure. On physical examination it is evident that there is a tumour within the chest, but it is difficult, or it may be impossible to decide at the first interview whether the tumour is an aneurism or a solid growth. The evidence may seem to be evenly balanced, and sometimes, though it must be confessed rarely, this is actually the case. The chances being equal, there is a temptation to ignore the difficulties, and to pronounce an emphatic and positive opinion in favour of one or the other condition. The odds being equal, the practitioner may deliberately choose to run the risk of being wrong, knowing that if he happens to be right he will gain more credit from being right than he will gain discredit from being wrong. This is exactly the principle on which the bone-setter makes his reputation. The public hear of the few successful results; they are widely noised abroad both by the patient and by the operator, but the failures, the many gross mistakes, and too frequently disastrous results, are forgotten, or make comparatively little impression on the public mind. As a matter of experience, it is found that one thoroughly successful result is quite sufficient to counterbalance a large number of serious errors. Now, we will suppose that our patient with the intra-thoracic tumour dies. The positive diagnosis which has been hazarded is found to be correct, the physician congratulates himself, and is congratulated over the result. People talk of the wonderful diagnosis which Dr So-and-So made, apparently without any difficulty, when others deferred their diagnosis, and were in hesitation and doubt. Well, another doubtful case presents itself; the same process is adopted, but this time the guess, for it is nothing more, is not correct. The temptation to appear brilliant at the risk of failure, where the chances seem equal, and to carry the diagnosis further than the facts of the case warrant, is a strong one, but it should be sternly resisted

and suppressed. Like all other temptations, it grows stronger and less easily resisted the more frequently it is allowed to get the upper hand, until finally it becomes a matter of habit and routine. Now the object of the diagnostician ought not to be to make a few happy and apparently brilliant hits, mixed up with an equal number, it may, and probably will be, with a greater number of mistakes, but to *arrive in every case at the best possible conclusion which the facts warrant.*

Scientific caution is a quality which cannot be too highly honoured, and it cannot be too strongly insisted upon, that in forming a conclusion it is better to err on the side of caution rather than of rashness. Caution may, however, be carried to an extreme. In the great majority of cases which come before the practitioner, the facts are quite sufficient to enable a competent man to come to a positive conclusion. When one finds a man constantly or very frequently hesitating to give a positive opinion, one naturally thinks that he is not able to form one, and that he is using cautiousness as a cloak for ignorance and doubt. One does occasionally meet with a shrewd man of the world who is not very strong professionally, who knowing by experience that when he does commit himself to a positive opinion he is apt to make a mistake, and recognising that positive errors tell injuriously against him, wraps himself up in the cloak of cautiousness, and tries to make capital out of his reserve by posing as one who gives careful and well-considered opinions.

The Out-patient Department as a Field for Clinical Instruction.—

Turning now to the educational side of the question, you will find that the out-patient department affords very great advantages as a place of learning, and as a field for clinical instruction. The teaching in the out-patient department differs, however, in many important particulars from that which is carried on in the wards. Both have their advantages and disadvantages. Here we have to see a large number of cases in a comparatively short time; in ward teaching, where there are many students, it is usually the custom to go thoroughly, and with great carefulness and detail, into one, two, or at the most three cases daily. In out-patient practice, the teacher knows nothing about the new cases which present themselves, and is thrown entirely upon his own inward resources and knowledge; if he is to succeed, he must be prepared not only to deal on the spur of the moment with everything that turns up, but to do so in a manner which will rivet the attention and command the satisfaction of his audience. Again, in out-patient practice the teacher can never be sure of his material; the cases which present themselves on any given day may be uninteresting, and afford few points calling for comment. Let me say, however, that almost every case, however trivial it may at first sight appear, usually presents some points of interest and practical value, and that as a matter of fact we rarely have a day here that

some case of real scientific value and practical importance does not turn up. A series of unimportant and apparently uninteresting cases throw, however, a great strain upon the teacher; for if his audience is to be kept interested and on the *qui vive*, he must, under such circumstances, put forth all his energy and resource. In ward teaching, on the other hand, the physician can always rely upon having some suitable and interesting case; it is possible, in fact, to select one's subject; those cases which are chosen have generally been thoroughly worked up beforehand; and the teacher is able, should it be necessary, to refer to authorities, and to look up any difficult or doubtful points. Such, at all events, was the method of ward teaching which I used myself to practise in the Newcastle Infirmary. Teaching in the out-patient department involves much more strain than teaching in the wards; and if it is to be successful, it requires, I find, a greater clinical experience and all-round knowledge, and demands more teaching experience and teaching resource.

One of the greatest advantages which the out-patient practice affords to the student is the number and variety of the cases which come before him; the out-patient department, consequently, affords admirable opportunities of acquiring a knowledge of the external alterations and characteristic physiognomic appearances produced by disease, and of cultivating the habit of rapidly and accurately observing every minute particular connected with the patient. The immense importance of this has been previously insisted upon. I repeat, that the number and variety of the cases which the student is able to see in out-patient practice is to him one of its great advantages.

But further, the cases are exactly the class of cases which you will see in your own consulting-rooms when you get into practice; many of the cases which you see in the wards are, on the contrary, cases such as you will not see, or will rarely see, in the ordinary routine of general practice. And here let me strongly urge you not to get into the way of thinking that any case is too trivial for attention. In ward practice the cases are, as a rule, serious, the majority of them being cases of advanced organic disease; in the wards you will see comparatively few cases of functional disturbance, and none of the trifling and passing ailments which are of every-day occurrence in private practice. In our work here we constantly meet both with cases of severe organic disease, and with minor ailments and functional disturbances. You will consequently have an opportunity of seeing how the minor ailments are to be treated and dealt with; and let me say that, although in reality trifling, affections of this kind are often very real to the patient, and may occasion him quite as much trouble and anxiety as diseases of a much more serious nature. Many of these minor ailments and functional derangements rapidly get well when left to themselves; others—but not all—are very amenable to treat-

ment; and you will find when you get into practice that one sometimes gets quite as much credit from the patient for the management of a trivial affection which would speedily have cured itself, as one gets for the most careful treatment of a serious and anxious case of organic disease. You will do well, then, to devote attention to functional derangements and trivial disorders of this nature.

But it is not only because it affords a field for acquiring a large experience of disease, and a great deal of absolute knowledge, that out-patient practice is so valuable. Quite as important, in my opinion, are the advantages which it affords of learning the different ways and methods of eliciting information; of examining, managing, dealing with, and pleasing patients; and of recognising the importance of that faculty which is perhaps more necessary than any other for great success in practice, viz., the faculty of impressing patients favourably and of inspiring confidence.

In this out-patient department you will see all varieties of mental temperament, and will come to understand the different ways in which differently constituted patients have to be dealt with. You will see, for instance, how, on the one hand, a few kind words and a kind and gentle manner soon succeed in gaining the confidence of children and nervous persons; how, on the other, a little sternness and the exhibition of a little force of will speedily bring silly, giggling young women, or equally silly young men, to a sober and satisfactory mental condition. You will learn to appreciate the importance, in cases of serious sickness, of cutting short the examination, and of avoiding, so far as possible, everything which is likely to distress or fatigue the patient; and you will come to see how important it is in some cases—as, for example, in hysteria, hypochondriasis, and many other functional affections—to act through the patient's mind and nervous system upon his bodily condition—to throw your whole soul, as it were, into your opinion, and to do your utmost to impress him with the conviction that there is no organic disease, and that there is no reason whatever why he should not speedily get well.

And now let me say a word or two as to the class of students for whom the kind of instruction which the out-patient department affords is best suited. The point is one on which there is, I believe, considerable difference of opinion. I understand that in one at least of the London Hospitals the junior students are recommended to attend the out-patient department, and the seniors are advised to confine themselves to the wards. This is, in my opinion, a very great mistake. I have no hesitation in saying that the out-patient department, as I conduct it here, is much better fitted for the senior than for the junior student. The beginner, desirous of acquiring the rudiments of clinical medicine and a knowledge of physical signs, should, in my opinion, concentrate his attention on a limited number of cases, and should study first one organ and then another, making himself in this way gradually familiar *first*,

with the normal physical signs (those which result from the physical condition of the healthy organ); *secondly*, with the pathological physical signs (those which result from the physical condition of the organ in different states of disease); and, *thirdly*, with the chief functional derangements and symptoms which result from its more striking and important lesions.

It is only after he has acquired a considerable amount of knowledge, and has made himself more or less familiar with the different symptoms and physical signs, that the student is capable of deriving full benefit from out-patient practice. With so much work to do, it is, as I have already pointed out, essential to economize time as much as possible; to avoid asking any unnecessary questions; and to see that every question has its point. Now, it is only the student who has some knowledge of disease who can see and appreciate the object of questions which are put in this way, and who can understand the mental analysis of the facts of the case which I am carrying on—as revealed by the questions which I ask—and can follow up my train of thought. It is only the advanced student who can thoroughly appreciate the physiognomy of disease, as it is exhibited in many different cases coming rapidly one after the other. Again it is quite impossible with the limited time at our disposal—even if it were desirable, which I do not admit—to explain the significance of elementary facts which are elicited in the course of the physical examination. In a case, for example, in which a double, blowing, endocardial murmur is audible over the course of the aorta and down the sternum, I do not stop to tell you that the murmur is indicative, and why it is indicative of aortic regurgitation—as I might think it advisable to do if I were teaching a class of beginners—I take it for granted that you know the significance of cardiac murmurs, and I proceed at once to direct attention to any special features which the case may present, and to the facts and circumstances by which we endeavour to determine whether the lesion has resulted from disease beginning at the root of the aorta or in the endocardium, and whether the aortic regurgitation is free or not—in other words, whether in the special case under observation the lesion is serious or not. Do not, however, let it be supposed that I wish to discourage the attendance of junior students altogether. All I want to point out is, that the special plan of examination and instruction which I adopt is better fitted for seniors than for juniors. There is always a good deal which the beginner can understand; and, although he cannot get the full benefit which a senior student can, yet a certain amount of time passed here will not be mis-spent; if he were to acquire nothing else, he cannot fail to get many valuable hints as to the methods of eliciting information, examining, managing, and dealing with patients.

In concluding this part of the subject, let me say, that in

advocating, as I have done, the claims and advantages of the out-patient department as a field for clinical study, I have not the remotest intention or wish to appear even to depreciate the claims and advantages of the in-patient department. Out-patient practice is merely supplementary, for although it fills up a gap and enables you to see certain forms of disease which are not always met with amongst the in-patients, it is, and always will be, rightly considered as subordinate and secondary. No one appreciates more than I do the importance of ward work; in short, the wards of the Hospital are the places where you ought to learn your medicine, and do the chief part of your medical work.

The Out-patient Department as a Field for Original Observation.—With regard to the opportunities which the out-patient department affords as a field for original observation, I can unfortunately say little. The time which we can devote to individual cases is so short, that it is seldom possible to make such an exhaustive examination as is required for scientific purposes, or to take full notes. In many cases we see the patient only once; the important and interesting cases are always, if possible, sent on to the wards, and those who do not wish to come into the Hospital very often do not, or are not able to come back. Original clinical observation can only be adequately carried out in the wards of a hospital. Personally I am only too conscious of this; for the first ten years of my professional life I was fortunate in holding hospital appointments which afforded me an abundant field for original work, and now, when I am much more able to make use of such advantages and to do really good work, I unfortunately cannot command them.

Part Second.

REVIEWS.

The Life of Sir Robert Christison, Bart., M.D., D.C.L. Oxon., LL.D. Edin., etc. Edited by his Sons. In two Volumes. I. Autobiography; II. Memoirs. William Blackwood & Sons, Edinburgh and London: 1886.

THE memoirs of one who for so many years filled such a prominent place in the University of Edinburgh, and whose personality was so distinct and whose influence in medical politics of all kinds was so great, could not fail to be interesting; and these volumes, though widely different in style and character, give, with some notable exceptions, a fairly just idea of what the man was, and what his contemporaries thought of him and learned from him and suffered at his hands.

The autobiographical portion is by far the most amusing, most complete, and gives a life-like portrait of a man from his own point of view. A healthy, fortunate, industrious, self-contained, and self-conscious man, he looks back from his well-earned leisure upon a long and masterful career, and sees the mountain-tops all aglow with the flush of successes and honours; forgets the toilsome way, the dull plains, and the dark valleys of the past, and describes for us a life more like that of a Greek hero with a knowledge of poisons than an ordinary nineteenth century professor. Born of a Scandinavian viking who had stalwart brothers, with a magnificent constitution, great athletic powers, lasting even to old age; taking a high place in all his classes; graduating early after an examination in which his answers were marvellously successful—Dr Christison had the immense advantages of a hospital training both in Edinburgh and London, and a chemical and toxicological education in Paris. Appointed professor at the age of 24, as the result of a political job, even more frankly barefaced than is usual in this more Pharisaical age, he had the chance given him, of which he availed himself to the full, of making himself a power in the University and an almost irresponsible dictator in the Medical Faculty.

The volume is interspersed with interludes of contemporary biography—with stories, new and old, but all told vividly and well; travels, duels, dinners, ascents of mountains, murder trials, epidemics, all in relation to and redounding to the glory of the central, bright, fortunate personality of the writer. Not that the egotism or complacency of the autobiography is offensive; quite the reverse—it is naive and simple, and leaves the reader with the feeling (a most valuable one in these pessimistic days) that this old world is a very good place to live in if only you are a high Tory, a healthy Scotchman, and, above all, a Professor in the University of Edinburgh.

But, alas! both in the volume and in the memoirs we find that there are certain drawbacks and adversaries. Even in this best of all worlds these are chiefly town-councillors, extra-academical lecturers, and strange beings which the professors know as *local candidates*. These local candidates are apparently related to the Scotch Medical Corporations, who seem, from dark hints in the autobiography and memoirs, to be constantly at war with, and generally to be defeated by, the Medical Faculty of the University, with Dr Christison at its head. To those of us old enough to read between the lines, these references and also the whole chapter on the election of Principal Sir Alexander Grant form most entertaining reading, but we fear may give posterity a somewhat one-sided view of what really occurred.

Indeed these corporations, extra-mural lecturers, and local candidates remind us, in their dark doings and general depravity, of the witches and goblins in the dark scene of a pantomime

plotting against the hero and heroine (the Medical Faculty of the University), but their dark deeds are being always counter-acted and their machinations defeated by the good fairy (Sir Robert). How deep and far-reaching these machinations are supposed to be, is revealed in a most self-conceited and self-deceiving little paragraph—which the editor should not have allowed to see the light—in which Sir Robert explains his failure as a consulting-physician by the dissension between the University and the Royal Colleges of Physicians and Surgeons on medical politics. “A great body of the younger and middle-aged general practitioners in Edinburgh—committed to the cause of the Colleges—left off consulting me and transferred themselves to Begbie” (Vol. ii. page 311).

The real fact was, that Dr Begbie, senior, was a great physician in the best sense, of ripe experience, with instinctive knowledge and great resource, while Sir Robert never succeeded in impressing either the profession or the public with similar confidence.

Another statement in a note on page 297 is so astounding that it deserves quotation. After a description of the contest for the Surgical Chair vacant by the death of Professor Miller, after a somewhat flattering account of one of the candidates, we find the following note, apparently by the editors. “Note—Nevertheless, he lost the election by the powerful influence brought to bear on the Town Council Curators in favour of a local candidate.” Can it be credited that the local candidate spoken of with such gratuitous impertinence was that great teacher and profound surgeon, the late Professor Spence, while the favoured one had at that time only the one great recommendation—that he was the son-in-law of the Professor of Clinical Surgery.

Blots like these disfigure an otherwise fairly good picture of the life of a strong, many-sided, interesting man. We hear too much about his walks, about the wonderful powers of mind and body, and, oddly enough, about his fevers and other domestic details. We might have had more about his colleagues—for though John Brown delighted to call him *ultimus Romanorum*, the Medical Faculty of his long day was a brilliant and interesting group.

Some of the minor anecdotes are very good. Thus the following strange query was put to a candidate by one of the councillors. “Are ye a jined member?” The candidate, an Englishman, looked, as he was, completely puzzled. When, to help him out, the councillor added, “Are ye a jined member o’ onie boadie?” (Vol. ii. page 18).

One more may be historically interesting as relating an occurrence in the dark ages, and surely can hardly be needed now by the rich professors of this age—the “Rothschilds of teaching.”

“Sir Robert Christison thus rebuked a brother professor who ‘accepted a fee from a sick student. They had been attending ‘him sometimes together, sometimes separately, and one day ‘when Sir Robert came alone, to his astonishment the student

"offered a fee. He at once declined. 'But,' said the student, "'Professor —— accepted one.' 'Did he? Very well, we "'are coming together to-morrow; offer me a fee in his presence.' "The student did so, and Sir Robert said, in a marked manner, "—'Oh no, sir, a professor never takes a fee from a student'" (Vol. ii. page 74).

That Sir Robert was a good judge of character and a good prophet we see from the following: "Dr Duncan's eldest son, now my covering sergeant, I call the *premier grenadier de l'armée*: he is a very handsome fellow of six feet and half an inch, probably the first athlete in the battalion, a first-rate shot, and as good a man and student as he is a volunteer. If I am not mistaken, you will hear of him making a figure in the course of time in the Edinburgh School of Medicine" (Vol. ii. page 385).

The second volume is enriched by a beautiful *éloge* by Sir Henry Acland; an estimate of Dr Christison as a physician by Professor Gairdner of Glasgow, full of that precision of thought, accuracy in detail, and breadth of view so characteristic of that distinguished teacher; and an account of Dr Christison's scientific work by his able assistant and successor, Professor Fraser, than whom no one is better able to estimate the value of therapeutical and toxicological research.

Sputum: its Microscopy and Diagnostic and Prognostic Significations. By FRANCIS TROUP, M.D. St And., etc., etc. Edinburgh: Oliver & Boyd: 1886.

READERS of Dr Troup's work will not be slow to admit its great merits. The beautiful photogravure plates and chromo-lithographs, the quaint learning, humour, and apt illustrations of the letter-press, as well as the rich clinical experience the author brings to bear on his subject, combine to make the volume one of the most valuable and interesting of the several valuable works that have recently issued from the Edinburgh School. It does not pretend to be an exhaustive treatise on the subject, but it will be hard for any one to show that the macroscopical and microscopical characters of sputa and their significations are not as fully dealt with as our present knowledge warrants. Some of the constituents described, such as Curschmann spirals and Charcot-Leyden crystals, will be novel to many readers, just as they were to not a few experienced observers who first saw them at Dr Troup's demonstration to the Edinburgh Medico-Chirurgical Society about a year ago. The presence of elastic tissue from the pulmonary alveoli is a point on which stress is laid. Dr Troup concludes, as a result of much patient observation, that in nine cases out of ten in which it is found, it

is significant of tubercular phthisis, that it may be found in the sputum before physical signs can be detected, that it is very often present before the bacilli of Koch appear, and that in regard to quantity it is a more faithful prognostic guide than the number or size of the latter parasites. Following the chapter in which he expounds these views are several photogravure plates, showing different specimens of elastic tissue and substances which are liable to be mistaken for them.

The bacillus of tubercle gets its fair share of attention. No fewer than eleven methods of staining and demonstrating it are detailed. Baumgarten's recent inoculation experiments and their significance are discussed. A bacillus which is sometimes present in sputa of patients suffering from lung mischief, and is apt to be mistaken for Koch's organism, is both described and figured. The author says he does not pretend to name it, but suggests that it is related to the pneumonic process.

Practically, it is of interest to note that Koch's organism very thoroughly resists putrefactive processes, which shows the absurdity of attempting to cure phthisis by sprays of *Bacterium termo*. As prophylaxis, disinfection of the phthysical sputa is recommended, and it is stated that this may be best and most cheaply done by means of carbolic acid in a 5 per cent. solution added to an equal part of the expectoration.

The remaining chapters deal very fully with the characters of, and the bacterial forms found in, bronchitic, bronchiectatic, hooping-cough, pigmented and bloody sputa, and the sputum from the larynx and its neighbourhood. Bacilli of tubercle are constantly found in phthisis laryngea long before there is any involvement of the lungs. Fragments of tissue coughed up and spat out have sometimes an important bearing on diagnosis. Three of the photogravure plates show portions and sections of tissue from the larynx found in sputum, and another (earlier in the volume) gives the appearance of elastic tissue from a case of strumous ulcer of that organ, showing how it may be distinguished from similar tissue discharged from the lung.

Altogether the volume may be recommended as a trustworthy guide to the examination of this important secretion with its contained pathological products, and it is one of which the Edinburgh School may well feel proud. One may be almost pardoned for suggesting that if the sputum has been neglected and treated as the Cinderella of medical science (see Preface), Cinderella may now be considered to have found her Prince.

Illustrated Lectures on Ambulance Work. By R. LAWTON ROBERTS, M.D. London: H. K. Lewis: 1886.

TWELVE months ago the first edition of this work was

noticed in these pages, and now a second edition has been demanded by an appreciative public. The book has been revised throughout, additional diagrams have been inserted, various portions partially rewritten, and a number of improvements effected, rendering the treatment of the work more effective. The author urges the necessity for universal instruction in ambulance work, not only in the military service of the country, but also in the civil life of the nation, in regard to which he produces some startling statistics, showing that the annual bill of suffering and death in connexion with the ordinary civil employments of the country amounts to no less than 122,000 human beings killed or injured. The fact that a second edition of this work has been already called for is evidence that ambulance work is receiving greatly increased attention, and is rapidly becoming a new feature in our national life, if we may judge from the number of classes which have been formed in various parts of the country, and from the numbers of individuals who are eagerly seeking the requisite qualification. Indeed, did the information thereby imparted extend no further than the knowledge required to stop the bleeding from a wounded artery, thousands of valuable lives hitherto sacrificed will be preserved in the future.

The volume before us is a most admirable manual for imparting efficient instruction in its special department. Divested as it is of technical details, the capacity will be a mean one which is unable to comprehend the simple yet complete, the terse yet comprehensive, instructions given for rendering first aid to the wounded. In the event of a third edition being, as we vain hope, soon called for, there are one or two points to which attention might be directed. The physiology of the subject might be amplified with advantage in Lecture I.: though the charge of crudity is not preferred, a little fuller treatment here is a desideratum. We have not found in any of the manuals on ambulance work which have come under our notice a description of the characteristic signs of death. This seems to be an important omission, and the student is left to form his own opinion on the subject by inference, not by direct teaching. When he learns that notwithstanding prolonged suspension of respiration and circulation life may not be extinct, it is all important that he should know exactly and speedily what the conditions are which indicate death. The knowledge that there are several signs, any one of which indicates unmistakably that the patient is beyond medical aid, must prove not only important to the ambulance man, but invaluable to other unfortunates who may be requiring his assistance. According to Bruhier, during the last century there were 54 people buried alive, 4 dissected alive, and 125 falsely considered dead. In the light of such statistics direct teaching on this important point would not be misplaced.

We feel inclined to join issue with the author, and through him with the St John's Ambulance Association, on one or two details in stretcher drill. Three men are instructed to place the patient on

the stretcher, which is placed *in line* with his body. Five words of command are given, involving so many different movements, viz., "Ready," "Lift," "March," "Halt," "Lower." This has always seemed to us bad practice, as the sidelong march is awkward for the bearers, and dangerous to the patient. We much prefer the plan followed by the St Andrew's Ambulance Association. They instruct four men to remove the patient. The stretcher is laid close alongside the body by No 4, who gives the requisite words of command, while Nos. 1, 2, and 3, who actually lift, do so all on the *same* side, the words of command being, "Ready," "Lift," "Lower." By this simpler plan time is saved, unnecessary suffering to the patient reduced to a minimum, and by the employment of a fourth man, who has special care of the stretcher, and gives the word of command, the bearers run no risk of getting their feet entangled with the extended stretcher. Apart from these hints for future emendation, we feel bound to give the work unqualified praise.

Elementary Bandaging and Surgical Dressing, with Directions concerning the Immediate Treatment of Cases of Emergency, for the use of Dressers and Nurses. By WALTER PYE, F.R.C.S., Surgeon to St Mary's Hospital. Bristol: J. Wright & Co.; London: Trübner & Co.: 1886.

MUCH of the success attained by individual members of the medical profession is due to minute attention to small details, and neatness and readiness in applying and suggesting appropriate means of treatment. A great deal has been done by the establishment of practical classes in the various medical schools to afford instruction to the student in such matters as are dealt with in the handy little volume which Mr Pye has written. With this book, which is small enough to be carried in the pocket without inconvenience, such instruction will be much more rapidly and easily mastered. Mr Pye has the art of conveying a great deal of knowledge in few words; and the volume, while in no sense a cram, will be found to contain information quite up to date, not to be discovered in more pretentious treatises.

Memorials of the Craft of Surgery in England. From Materials compiled by JOHN FLINT SOUTH, twice President of the Royal College of Surgeons in England, and Surgeon to St Thomas's Hospital. Edited by D'ARCY POWER, M.A. Oxon., F.R.C.S. Eng.; with Introduction by Sir JAMES PAGET, Bart., F.R.S., Sergeant Surgeon to Her Majesty the Queen. Cassell & Company, Limited: London, Paris, New York, and Melbourne.

The Memorials of the Craft of Surgery is a carefully

compiled and interesting, though somewhat lengthy, history of the progress of Surgery from its earliest records till the present day. The starting point is the first mention of the Barbers in the city records of the year 1308; and the author traces with great precision and minuteness the rise of the Barbers' and Surgeons' Guilds, their intermeddlings, alliance, separation, and, finally, the establishment of the College of Surgeons in London, by Royal Charter, in the year 1800.

Each step in the advancement of Surgery is described with the greatest accuracy and care; no detail is too trivial to be related, and no quotation is too unimportant to be given, generally at full length.

The reader of those pages cannot help feeling that much time has been spent in patient research before such a result could have been obtained.

In his short introduction, Sir James Paget states concisely the motive of the book, and expresses an opinion that the "Craft" has no reason to be ashamed of its pedigree.

The Diseases of the Prostate. By Sir HENRY THOMPSON. London: J. & A. Churchill: 1886.

THE sixth edition of a standard work will ordinarily call for little comment, the necessity for issuing the edition being in itself proof of excellence. In the present instance we think it advisable to draw attention to an important alteration, which has been introduced by Sir Henry Thompson into this new edition. The last edition was published in 1883. Since then attention has been much directed to the risks which persons affected with enlargement of the prostate run from the introduction of septic organisms into the bladder. Sir Henry is not a strong believer in the germ theory and antiseptic surgery, still he has found it necessary to write several pages in this new edition on the dangers of introducing air and bacteria along with a dirty catheter. What he says might be put more strongly, and more might be said on the subject of the pathological changes which follow septic cystitis, but we must be thankful for what we have got.

We regret that no better definition of the cause of enlargement of the prostate is given than the old one of "a necessity of structure," p. 91. Enlarged prostate is so common an affection, that one would like to know more about its etiology, so as to be forewarned and, if possible, forearmed.

We are glad that Sir Henry Thompson has issued this new edition, for it is, with all its faults, the book on the subject of Prostatic Disease.

Regional Surgery. Part III. By F. A. SOUTHAM, M.A., M.B., F.R.C.S.E., etc. London: J. & A. Churchill: 1886.

THIS part, which deals with the abdomen and lower extremity, completes a work which is most valuable as a reliable authority and ready reference. The volumes are of a convenient size, well indexed, divided into numbered paragraphs, and altogether form a most useful manual for either students or practitioners.

Papers upon Genito-Urinary Surgery. By A. T. CABOT, M.D., Surgeon to the Mass. General Hospital, Clinical Instructor in Genito-Urinary Surgery at Harvard Med. School, etc. Pp. 39. Boston: David Clapp & Son: 1886.

THE general scope and character of these four papers is such as might have given them a place in any of the better medical journals. The first narrates a successful case of nephrotomy for hydronephrosis. By hydronephrosis is here meant a urinary cyst resulting from an injury, not the dilation of the kidney substance to which the term is more frequently applied. The value of the subsequent discussion of the case is marred by the want of a clear distinction between these two conditions. The second paper deals with "The Constrictor Urethræ; its Relations to Urethra Pathology and Treatment." Much useful information is here presented to the reader in a suggestive way. The muscle in question is shown to act as stopcock between the bladder and the meatus, so that the effects of inflammation vary according to whether their seat is proximal or distal to this central constriction. Clinical features of disease and rules for treatment are thus associated with anatomy and physiology, a combination which adds to the interest of all. The third paper narrates an unusual "Case of Multiple Calculi in the Bladder;" while the fourth deals with "The Application of Antiseptic Principles to Genito-Urinary Surgery." The dangers to be feared are pointed out, and the best methods of avoiding them are clearly stated. This and the second paper are well worth reading, showing as they do experience, judgment, and thought.

Manual of Pathological Histology. By CORNIL and RANVIER. Translated by A. M. HART. Vol. II., Part 2. London: Smith, Elder, & Co.

IT is now our duty to notice the final portion of this work, treating of the pathological conditions of the digestive organs other than

those of the alimentary tract—which has been already done; of those affecting the hæmato-poietic glands, the genito-urinary organs, and especially to be noted the skin, thus completing one of the most valuable contributions to scientific medicine which has been of late years issued from the press of any Continental nation.

Having had occasion to speak in high terms of the former portions of this work, it is now unnecessary to do so again, and simply repeat, that the high standard of excellence aimed at at the commencement has been kept up to the end.

The translator deserves some special credit for the manner in which this part of the work has been done. The language is always concise and clear, and the text most readable.

De L'Osteoclasie. Par Le Docteur ALFRED POUSSON, Lauréat de la Société de Chirurgie, etc. Pp. 262. Paris: J. B. Baillière et Fils: 1886.

THE success which in this country has attended operations of osteotomy, carried out antiseptically, has left little to be desired by British surgeons when an operation for a malformed bone has to be undertaken. This is equally true with regard to simplicity of apparatus required, ease of performance, freedom from risk to patients, and certainty of good result. When antiseptic methods can be relied on, osteotomy is an admirable operation.

In France, however, the author of this work has found that the results of osteotomy are by no means uniform, which we may interpret as pointing to the failure of the antiseptic methods employed. So long as this is the case there is a field for osteoclasty, more especially since, by an improvement in the apparatus, a bone may now be fractured at any given point required without causing injury to surrounding parts.

M. Robin, a surgeon in Lyons, has invented a machine which, fixing the bone to be broken just above the desired spot, afterwards, by means of long lever and leather collar, the part just below can be sharply raised up so as to make the bone snap short across.

In the book before us Robin's instrument is described and figured as the most perfect form of an osteoclast. Another one by Collin is also recommended, but it is on the same principle, and, like the other, fractures the bone at a given spot. The work may be looked upon as a complete treatise on the best and most modern applications of osteoclasty. A short historical sketch of previous methods enables the reader to appreciate better the present position of the operation.

The first part treats of the first principles of osteoclasty, objects to be attained, and the various instruments employed, especially

those of Collin and Robin; also of the immediate effects of the operation on the bone and soft parts as determined by experiment; and, finally, of the after results and possible accidents. The second part deals with the practical applications of the operation to badly united fractures, rachitic curves, genu valgum, and to anchylosis and certain other affections of joints. Numerous tables of results and a full reference to the literature of the subject make the work complete. Those who wish to have a satisfactory account of an operation which seems to give as good results as osteotomy without the risk of septicity should antiseptics fail, cannot do better than consult this work.

Litholapaxy. By P. J. FREYER, M.A., M.D., M.Ch., etc. London: J. & A. Churchill: 1886.

THIS is mainly a reprint of papers which appeared in the *Lancet*, and were doubtless read and appreciated by many besides ourselves. Dr Freyer is a thorough believer in "lithotripsy at a sitting," and having had large experience (128 cases), speaks with authority. His "new" method of finding a small stone is very neat and simple. He uses an aspirator or evacuating catheter, and trusts to the rush of water bringing the calculus with a "click" against the instrument.

We can recommend the book as interesting and profitable reading.

Elements of Pharmacy, Materia Medica, and Therapeutics. By WILLIAM WHITLA, M.D., Physician to the Belfast Royal Hospital, etc. Third Edition. London: Henry Renshaw: 1885.

THIS edition contains the medicines lately introduced into the New Pharmacopœia, and is free from some of the defects of former editions. Like the other editions, this one will continue to hold its place among the many text-books on *Materia Medica*.

The Pocket Formulary and Synopsis of the British and Foreign Pharmacopœias, comprising Standard, approved and most recent Formulæ for the Preparations and Compounds employed in Medical Practice. By HENRY BEASLEY. Eleventh Edition. London: J. & A. Churchill: 1886.

THIS "Pocket Formulary" is an excellent little work of reference. The fact that it comprises the most important formulæ in the French, German, and United States Pharmacopœias, in addition to those of our own British Pharmacopœia, greatly adds to the interest and usefulness of the book.

A Manual of Practical Therapeutics, considered with reference to Articles of the Materia Medica. By EDWARD JOHN WARING, C.I.E., M.D., F.R.C.P. Lond., etc. Edited by DUDLEY W. BUXTON, M.D.; B.S. Lond., etc., etc. Fourth Edition. London: J. & A. Churchill: 1886.

DR WARING'S Therapeutics has long been known as one of our best works on the subject. We welcome this *fourth* edition, containing as it does the medicines introduced into the last edition of the *British Pharmacopœia*, feeling sure that this edition will maintain its justly high place amongst our text-books on Therapeutics.

Coca, Cocaine and its Salts; their History, Medical and Economic Uses, and Medicinal Preparations. By WILLIAM MARTINDALE, F.C.S., late Lecturer of Pharmacy and Demonstrator of Materia Medica at University College, etc., etc., London: H. K. Lewis: 1886.

THE fact that this book is written by Mr Martindale is a sufficient guarantee for its being well done. The book is most interesting, and full of useful information. We can cordially recommend its perusal to all our readers, lay as well as medical. Mr Martindale has done good service by writing this book on Coca, one of the most interesting and useful of drugs.

There is prefixed to the volume an excellent coloured drawing of the *Erythroxylon coca*.

The work is printed "in blue ink on green paper," because it is supposed "to be admirable for the sight." This is a doubtful benefit, for most people will feel in reading this book that such printing causes a considerable straining on the eyes.

A Short Manual of Chemistry. Vol. I.—Inorganic Chemistry. By A. DUPRÉ, Ph.D., F.R.S., etc., Lecturer on Chemistry and Toxicology at the Westminster Hospital Medical School; and H. WILSON HAKE, Ph.D., F.C.S., Assistant-Lecturer on Chemistry at the Westminster Hospital Medical School. London: Charles Griffin & Co.: 1886.

THIS "Manual" is excellently arranged and well adapted for students of chemistry. The authors are to be congratulated on the production of a book which gives the students succinctly, yet fully, the leading facts in "Inorganic Chemistry," and is sure to become a favourite text-book. Among the many text-books on chemistry it is sure to hold a foremost place.

Notes on Analytical Chemistry for Students in Medicine. By ALBERT J. BERNAYS, Ph.D., F.C.S., etc., Professor of Chemistry at St Thomas's Hospital Medical School, etc., etc. London: J. & A. Churchill: 1886.

WE have much pleasure in highly recommending these "notes" to the notice not only of medical students (for whom they are specially intended), but to all students of chemistry. The book is well written, excellently arranged, and cannot fail to have a wide circulation.

Lays of the Colleges: being a Collection of Songs and Verses by Members of the Æsculapian, Medico-Chirurgical, and other Professional Clubs in Edinburgh. MacLachlan & Stewart, Edinburgh: 1886.

EDINBURGH has been famous as a great medical school for more than three hundred years, and by its teaching, both within and without the walls of the University, and by its great Hospital, it still attracts numberless students and patients within its walls.

All over the world a Scotch doctor is regarded as a type of hard-headed, dry, and pushing industry; sometimes accused of a quarrelsome temper; generally considered to have an eye to the main chance.

But of late years, partly owing to the spread of education among the general public, and partly to some excellent newspaper articles on the subject, it has become known that there is an inner circle of esoteric practitioners of the healing art with strange customs, who under different names meet in secret conclave, and eat, drink, laugh, make bad poems, write songs, and sing them too; in fact, conduct themselves in a manner very unlike the preconceived opinions regarding their sect.

Their wit and wisdom, their friendliness and jollity, cannot in any way be made public possession; but in this beautiful volume a few of their songs have been collected and given to the world. Bold type and good paper have done their best; but, alas! they cannot reproduce the personal characteristics which make the song fit the singer. Indeed, some of the songs, even with the addition of notes, are hardly intelligible to those outside the charmed circle. But let us be thankful for what we have. It is a book which makes most excellent reading. Two of the gifted singers have gone over to the majority; and it was with a wise insight that the editors have put at the end of Dr Andrew Wood's contributions his most touching and prophetic little lyric—"My time is drawing near." The late Dr Sidey is represented by four songs—none better than the "Burnie that wins to the Sea."

The other contributors, all alive and well, we can hardly praise to their faces. Sir Douglas Maclagan's exquisite taste, humour, and tenderness are well shown. Dr John Smith has twenty-four songs and verses which touch every chord,—from the rollicking humour of the Irish ones, to the sly fun of the Clinical Examination.

Dr Gillespie has given many extracts from his famous little book, full of jollity, chaff, and humour,—without an unkind or ungente word. The others are from the pens of men well known each in his own line of work. Indeed, the book shows, as is modestly hinted in the preface, where we find "All work and no play makes Jack a dull boy; and there is perhaps no better illustration than is exhibited in the names of the authors contained in the volume that high professional attainments and reputation are not incompatible with adopting the old adage—"*Dulce est desipere in loco.*"

The Asclepiad: a Book of Original Research and Observation in the Science, Art, and Literature of Medicine, Preventive and Curative.
By BENJAMIN WARD RICHARDSON, M.D., F.R.S. 4th Quarter.
1886.

THIS brilliant quarterly is, if possible, more brilliant and original than usual. The memoir of Ambrose Paré is written in the most attractive style, and in a small space gives much and accurate information. The practical article on the ammonia treatment of fibrinous obstruction of the vascular system is most suggestive, and full of the author's very special experience. The original work is upon the subject of transmutation of the blood under electrical vibration. The reviews are short and to the point.

Report of St Agnes' Hospital, 3 Margaret Street, London, W.
London: John Bale & Sons.

THE object of this Hospital is to combine a refuge for unfortunate women with all that reclaiming influences can do for them. It is, in fact, a medical mission, and as such deserves a hearty support. Unfortunately, like other institutions in these bad times, its balance-sheet shows an increasing deficit. Its work has apparently been done quietly and unostentatiously, and would not have been made thus public had its former income been maintained. Doubtless, when its work becomes more widely known, its support will be proportionately increased.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LXVI.—MEETING I.

Wednesday, 3rd November 1886.—Prof. GRAINGER STEWART, *President, in the Chair.*

I. ELECTION OF OFFICE-BEARERS.

THE following gentlemen were elected office-bearers for the ensuing year:—*President*, Prof. Grainger Stewart; *Vice-Presidents*, Dr John Duncan, Dr Peel Ritchie, Prof. Chiene; *Councillors*, Dr John Smith, Dr Littlejohn, Dr Troup, Dr Allan Gray, Dr James, Dr Leith Napier (Dunbar), Dr T. Duddingston Wilson, Dr G. A. Gibson; *Treasurer*, Mr A. G. Miller; *Secretaries*, Dr Cathcart, 44 Melville Street; Dr James Ritchie, 14 Charlotte Square; *Editor of Transactions*, Dr William Craig, 7 Bruntsfield Place.

II. EXHIBITION OF PATIENTS.

1. *Dr Byrom Bramwell* showed a case of HEMIPLEGIA due to an injury of the head at the time of birth.

Dr Craig asked if a depression existed now.

Dr Clouston said he had had a dozen such cases under his care, and had post-mortems in a number of them. These indicated that trephining would be quite useless. The opposite hemisphere was usually more or less undeveloped, and the cranium much thickened on that side.

Dr James asked if measurements had been taken of the boy's head. He thought it looked rather small, but it might not be so for his age.

Dr Bramwell stated in reply that there was now no apparent evidence of the former injury. The two sides of the head appeared to be symmetrical. He thought *Dr James's* suggestion a valuable one, and would have the head accurately measured.

2. *Dr Cotterill* showed, for Professor Annandale, a boy who had been successfully operated on for INTUSSUSCEPTION in the Sick Children's Hospital.

3. *Dr Cotterill* showed a man who had made a satisfactory recovery from severe traumatic TETANUS. He had sustained a wound of the ball of his right thumb in getting over a wall covered with

broken bottles. Symptoms of tetanus having occurred, he was put on physostigma by his own medical attendant, but without any benefit. He came into hospital on the sixteenth day after the injury, and was treated for some days with chloral and bromide. Eserine (gr. $\frac{1}{4}$ th) was given twice after consultation with Professor Fraser, and icebags were applied to the spine. As he did not improve, the cicatrix was freely excised. Since the operation there had been no recurrence of the fits.

III. EXHIBITION OF SPECIMENS AND PHOTOGRAPHS.

1. *Dr Byrom Bramwell* showed—(1) photographs of a CHILD affected with OPTHALMOPLÉGIA EXTERNA ACUTA, which showed the condition at the height of the paralysis and after recovery; (2) also a photograph of the HAND of the same patient, showing an enlargement of the first phalanx of the middle finger of the right hand, which apparently was the result of scrofulous disease of the bone; (3) a series of photographs illustrative of a TUMOUR of the PITUITARY BODY; (4) a large ANEURISM of the RIGHT POSTERIOR CEREBRAL ARTERY, and a series of photographs illustrative of the position of the aneurism and its relationship to the brain tissue.

2. *Mr A. G. Miller* showed—(a) a VESICAL CALCULUS removed by a new method devised by Professor Annandale, which consisted in gripping the stone with a lithotrite, projecting it above the pubis against the abdominal wall, and cutting down upon it. He found the operation exceedingly easy, and the result had been a success. (b) Parts from a case of INTUSSUSCEPTION successfully operated on. The intestine was unravelled with comparative facility, but there was bronchitis at the time of operation, from which the child ultimately died. There were no symptoms of peritonitis, and no trace of it was observed at the post-mortem. Mr Caird had made a cast showing the conditions after the operation. (c) Parts from a case of EXCISION of the KNEE for ankylosis. Along with the diseased parts was a piece of skin, which Mr Miller said he was now in the habit of removing to prevent the redundancy so often seen after that operation.

3. *Dr Church* showed, in connexion with his paper on a case of poisoning by corrosive sublimate, a sample of the FLUID taken, and pieces of COPPER FOIL treated with arsenic and mercury respectively in Reinsch's tests for these substances; also the difference microscopically of sublimed globules of mercury and sublimed rounded crystals of arsenious acid.

4. *Mr Maxwell Ross* showed, for Dr Kirk Duncanson, a drawing of an ANIMAL ORGANISM removed from the ear of a native woman in India by Surgeon J. More Reid, of Karachi. It appeared along with two others out of a piece of softened wax which had been

washed out of the meatus, was about a quarter of an inch in length, of the thickness of thick thread, and tapered at both ex-



The three small curves below the figure represent the natural size of the organism. The drawing was made by Dr W. Bertie Mackay.

tremities. The drawing of it was made under a low power of the microscope ($\frac{1}{4}$ -inch objective). All of them were very active in their movements in a basin of water, in which they remained for four days, and were only killed in manipulating them on to a slide. She accounted for their presence by stating that similar larvæ appeared after she had slept near a heap of cow-dung on visiting her daughter at Bombay some months previous.

5. *Mr Joseph Bell* showed a large FIBROMA removed successfully from the right iliac region and pelvis of a man.

From notes by Mr John Garvie, house-surgeon.—Donald Macdonald, 48, from Lochaber, Knockholium, Stratherrick, Inverness-shire, shepherd, was admitted on 1st September, suffering from large tumour in groin.

Family History.—Father alive and healthy. Mother died when he was 4 years old, he thinks, of consumption. Sister died in childbirth. Has four of family, all alive and well.

Habits.—Lives in high country, and is accustomed to be out night and day in all sorts of weather. Lives in a damp house, but when tumour appeared he lived in a good house. Is not a teetotalter; is not accustomed to drink; as shepherd he had to do for long intervals without food.

Previous Health.—Never remembers a day's illness.

History of Present Attack.—In April two and a half years ago a small lump appeared in the groin (?) It slowly grew, extending in line of groin both outwards and inwards. In about six months it passed into scrotum; for about four months he has noticed no difference in size. During last winter, when it was attaining its present size, it was extending not so much outwards and inwards as projecting from the natural line of the body. He has worked up till last Saturday, and then those working with him never knew that there was anything wrong with him. He worked as well as ever he did—only now the bulk of the tumour interfered with him stooping. There are no abnormal sensations in left leg; he can move it as well as the other.

Local Condition.—A large oval projecting mass is seen in right groin, passing into and distending the scrotum, turning penis to the left side. Above it leaves the line of Poupart's ligament, lies on its abdominal side, and projects upwards into right lumbar region. It has a steep side towards the thigh, which it overhangs. On the abdominal side it falls more gradually, reaching to within $2\frac{1}{2}$ inches from the umbilicus (on the left side there is 6 inches between the umbilicus and Poupart's ligament). The tumour has a smooth surface, but can be seen to be made up of four or five large masses. On the summit there are various small reddened elevations. It measures 12 inches long, $8\frac{1}{2}$ inches broad, and will project 4 inches above the general surface of the body.

Palpation.—It feels quite hard and firm; no pain on pressure. The tumour can be felt not to be made up of one large mass, but several. There is a margin towards the thigh, and on deep palpation, pushing hand well into abdomen, the tumour edge can be felt to turn. The upper and outer part is doubtful; an indistinct margin can be felt, evidently beneath some of the muscle layers; but a hardness seems to exist further out, and whether this be a psoas muscle or not (for on flexing and extending the thigh a change is felt) cannot be distinctly made out. The lower margin passes into the scrotum, and is much narrower. Only one-third of the scrotal mass is of the same consistence as the rest of the tumour; the remainder is much softer in consistence. The testicle, though distinct from this, feeling harder than normal, and cannot be altogether separated from it. Between these two, which are distinct from one another, though of the same tumour, several nodules of cartilaginous consistence can be felt. On percussing over the tumour the note is not flat all over, but along its whole abdominal margin a portion, about $2\frac{1}{2}$ inches broad, gives a deeply intestinal note.

Operation.—On 10th September a long incision was made over the tumour above the reddish nodules. Inflammatory adhesions were found binding down skin to the tumour. The tendon of the external oblique muscle covered the tumour. This was divided, and the tumour capsule exposed. The upper part of the tumour was

now examined to see how far the tumour extended, and if it was possible to remove it. A distinct rounded encapsuled margin was felt. The abdominal side of the tumour was now examined, and found not so encapsuled, and thick adhesions passed from the tumour to the tendinous structure. Another sweeping incision was made, joining the extremities of the former, and enclosing an elliptical area of skin in which were the reddish nodules. The skin was dissected down to the lower border of the tumour. The upper border was again attacked, and thick inflammatory adhesions cut through. Part of the conjoined tendon cut. Now entered the sheath of the rectus muscle; as now only transversalis fascia between the peritoneum and tumour, was thought best now to attack the scrotal part. An incision was made from the long incision over the scrotum. The whole half of the scrotum, tumour, with testicle was rapidly and easily removed from the scrotum. Thus hoped easier to reach the lower surface by raising the whole tumour. It now seemed as if the tumour followed the cord and passed into the abdominal cavity. Again went to the upper extremity. On dissecting, a further rounded, well-encapsuled tumour deeper and higher than the former was found at the upper extremity. It was about 4 inches broad. On raising and dissecting this, found peritoneum attached and adherent. It was dissected off as far as possible, then it was necessary to cut it, and enter peritoneal cavity. The intestines and omentum were now apparent, and kept back with a sponge while the tumour was further attacked. There now remained the huge mass attached to the deeper parts by pedicle. It was thought easier to finish by cutting through this, and thus be able to deal with deeper. The tumour being non-vascular in character, this was done. With the finger in the peritoneal cavity the tumour was felt to extend into the abdominal cavity and pass along the pelvic brim. The deeper part was gradually freed from its attachments. Several large veins were seen; one especially large seemed not to be femoral, though just passing into it. After further dissection, the tumour was narrowed to a neck or pedicle about 2 inches broad; this connected the tumour with the deep parts. This was swept across, and the intra-pelvic part left alone. Carefully washed peritoneum and bowel exposed; stitched the edges of the peritoneum carefully together; then well washed the parts with corrosive; drainage—stitched—dressed.

Microscopical Examination.—The tumour was found to be a fibroma, and any difference of density was explained by the relative difference in fibrous and cellular elements.

Progress.—For four days his temperature remained above normal. He complained of feverishness and flatulence. His bladder had to be relieved by a catheter once. On the fifth day his temperature fell, and since has never been above normal. The dressings were renewed daily, so that there might be no danger of urine finding

its way to the wound. The skin did not completely cover on the gap left. In a few days healthy granulations covered the area. Healing satisfactory.

IV. ORIGINAL COMMUNICATIONS.

1. *Mr F. M. Caird* read his paper on THE SHOULDER-JOINT IN RELATION TO CERTAIN DISLOCATIONS AND FRACTURES, which will appear in a future number of this journal.

Mr Joseph Bell, in the course of a few remarks, said that *Mr Caird's* paper was a very interesting one, and was the outcome of a very large amount of really good work on the subject. To himself it was a source of much pleasure to find that *Mr Caird* had not only read with care a paper on the nomenclature of scapulo-humeral dislocations written by himself twenty years ago, but that he also agreed with many of the conclusions of that paper. One of the chief points of interest *Mr Caird* had emphasized was the question of the dent in the head of the humerus. He did not think surgeons had been sufficiently alive to this as stopping short of fracture. He had held and taught that the impact on the edge of the glenoid was the cause of fracture of the anatomical neck.

Professor Chiene said that, though *Mr Bell* and *Mr Eves* had forestalled *Mr Caird* in regard to the causation of fracture by impact against the edge of the glenoid, he had shown that undoubtedly dislocation of the shoulder-joint might occur directly forwards. The old view that it was always first downwards and then forwards he was now convinced was incorrect as regards subcoracoid dislocations. It was also evident that in old-standing subcoracoid dislocations surgeons were not justified in interfering to the same extent as in intra-coracoid dislocations.

Mr Caird said that, in looking over German literature, he had not hitherto found attention drawn to this point. He had to thank the University authorities, particularly *Professor Chiene* and *Sir William Turner*, for assistance and access to museum specimens; and also the Curator of the Museum of the Royal College of Surgeons.

2. *Dr Church* read his paper on A CASE OF POISONING BY CORROSIVE SUBLIMATE, which will appear in a future No. of this Journal.

Dr Bramwell said *Dr Church* has so fully considered all parts of the case that he has left little or nothing to be said. The most important point seemed to be the remarkable fact that, although the child only survived twenty-two hours, no trace of the poison could be detected by careful chemical analysis. In the previous cases of poisoning by corrosive sublimate in which no poison had been found in the tissues after death, the patient generally survived for some days, and it was reasonable to suppose that the poison might have been excreted from the body; but, in this case, it was much more difficult to accept the excretion theory.

Dr Craig observed that the quantities of irritant poisons which could be taken with or without producing fatal results could never be accurately determined, because no one could tell the amounts ejected by vomiting or got rid of through the bowels. The probability was that, in this case, the greater part was eliminated either upwards or downwards. They could not very well get rid of the difficulty on the theory that the perchloride of mercury was changed into another salt, because it could only be changed into another salt of mercury, and the tests were applied to find mercury.

Dr James asked if it was usual in cases of irritant poisoning proving rapidly fatal to have such a rise of temperature (106.6 F.) as that noticed by *Dr Church* in his case? This might be an important question in reference to diagnosis, as one would expect a fall at the commencement or during the collapse following a dose of such a substance.

Dr Church said that in the recorded cases there was no mention of an observation of the temperature.

Dr Bramwell suggested that the temperature was probably taken when the stage of collapse was over.

THE GLASGOW OBSTETRICAL AND GYNECOLOGICAL SOCIETY.

THE first meeting of the session 1886-7 was held in the Faculty Hall, St Vincent Street, on Wednesday, the 20th October, at 8 P.M.

Dr John Marshall, Coatbridge, exhibited an INFANT, now 5 months old, from whose occiput he had removed a meningocele when it was only a few days old. The tumour (which was the subject of a communication last session) was also shown. Many of the Fellows examined the cicatrix with much interest.

The Treasurer's Statement was then received, showing a clear balance of £3, 13s., after defraying all preliminary and other charges.

The Secretary submitted his Report, which showed the Society to be in a very flourishing condition, and to number 74 members. Notwithstanding the number of communications that had been made during the session, there remained several papers which could not be overtaken during the first session. An epitome of the work done was read; and he trusted the Society would always be able to show as good a record, as, when it should cease to work it would cease to have a valid reason for its existence, but not till then.

Subsequently, office-bearers having been elected, the *President*, on retiring from the chair, expressed the pleasure he had had in presiding over their meetings. He said there was abundance of

material in Glasgow to occupy the attention of the Society, and he trusted the members would not wait until they had elaborated papers, but would bring forward specimens and cases at once as they occurred in practice. The Society would be pleased to learn the "how" and the "when," and would endeavour to solve the "why" itself.

Dr Sloan, on assuming the presidential chair, moved a vote of thanks to *Dr Reid* in graceful terms; and then exhibited a HEWITT'S CRADLE PESSARY, which had been incarcerated for some months in the vagina of an aged woman. She had had the instrument introduced six months prior to *Dr Sloan's* examination, to remedy a supposed antelexion. Examination revealed the fact that it had become displaced anteriorly, causing pressure on the cervix, and eventually hypertrophy of that organ, and the imbedding of the posterior limb in its tissues. In order to extract it the anterior, or presenting, limb had to be filed through. One of the principal symptoms of which the patient complained *was pain at the umbilicus*. *Dr Sloan* laid emphasis on the necessity which lay upon every practitioner to explain to his patient that whenever a pessary caused pain or discomfort it ought to be removed at once. He added that the woman referred to was now the subject of pro-cidentia; but that she felt so much better, comparatively, since the offending instrument had been removed, that she elected to be without any support.

Dr W. L. Reid stated that he had used Hewitt's pessary frequently for antelexion, and never found harm to result; but on the contrary, in at least half the number of cases, much benefit.

Dr Wallace alluded to a case which had come under his care of an incarcerated Blackbees.

Dr Park remarked that the facts set forth seemed to indicate that it was not the pessary which had been to blame, but rather the omission of due care to prepare the parts for the introduction of an artificial support of any kind, and to see that the parts were not irritated by the support after introduction.

Dr Murdoch Cameron homologated this.

Dr Sloan supplemented his previous observations.

Dr Glaister read the first part of a paper ON THE STATE OF THE ART AND SCIENCE OF MIDWIFERY FROM THE DAWN TO THE MIDDLE OF THE 18TH CENTURY. Quoting from Sir F. Ould and Smellie, he gave graphic illustrations of the ethical disorder and general ignorance in which the practice of the art was sunk during this period. Passing on he traced the inception of the science through the works of Portal, Pugh, Dionis, Deventer, La Motte, Amande, and Edward Moubay. He especially emphasized the fact that, as early as 1733, Moubay gave an account of the forceps in the *Edinburgh Medical Essays*. Then, after alluding to Manningham, he gave some interesting biographical details concerning Smellie, whose first volume was published in 1751, albeit it bears the date

of the subsequent year on its title page. The second volume was published in 1754, and the third in 1764, the year after his death. His library, consisting of about 400 volumes, had been bequeathed to, and was now in possession of, the Lanark Grammar School, where are also the original plates from which drawings were made. After referring to William Hunter and Chapman—who, he said, was the first to describe forceps, after having used them for about twenty years—he passed on to give some interesting information concerning the Chamberlens. It seems that they were a Huguenot family, and numbered two when they originally immigrated from France, viz., Dr Peter, the elder, and Dr Peter, the younger—this being a favourite method of designating brothers among the Huguenots. The former was *granduncle* to Paul Chamberlen, and the latter *father* of Hugh, the translator of Mauriceau. He did not claim the *invention* of the forceps, but that his family had extensively used them. Dr Glaister went on to explain how the forceps came into the possession of the family, and indicated that they were in general use all over Europe in 1742. He then read the description of the forceps given by Smellie, as well as his instructions for applying them; and rendered an account of his invention of the “lock,” thus superseding the “pin” fixing in previous use. Finally, he said, it was doubtful whether to Smellie or Pugh was owing the invention of the “double curve.”

The following is a list of the office-bearers for the year, viz.:—*Honorary President*, Prof. Leishman; *President*, Dr Samuel Sloan; *Vice-Presidents*, Prof. Abram Wallace, Mr Stuart Nairne, F.F.P.S.G.; *Treasurer*, Dr Robert Pollok; *Secretary*, Dr G. A. Turner; *Editorial Secretary*, Dr Robert Park; *Council*, Drs Murdoch Cameron, Halket, Marshall (Coatbridge), W. L. Reid, Caldwell Smith (Motherwell).

MEDICO-PSYCHOLOGICAL ASSOCIATION.

A QUARTERLY meeting of the Medico-Psychological Association was held in the hall of the Royal College of Physicians, Edinburgh, on Thursday, 11th November. Dr Byrom Bramwell showed a COLLECTION OF PHOTOGRAPHS OF BRAINS in section and whole, and explained his speedy method of making microscopical examinations of that organ; Dr Rorie (Dundee Royal Asylum) read a paper on THE RECORDED TREATMENT OF THE INSANE SIXTY YEARS AGO, as illustrated by the records of the Dundee Asylum; Dr Maclaren (Stirling District Asylum) read a PSYCHOLOGICAL STUDY OF LOUIS XVI.; Dr Campbell Clark (Glasgow District Asylum) followed with DETAILS OF AN ASYLUM SERVICE PROVIDENT SCHEME; and Dr Urquhart (Perth Royal Asylum) read notes of TWO CASES OF SYPHILITIC INSANITY. There was a very good attendance of members, and considerable discussion was evoked by the papers

read. In the evening the Association dined in the Edinburgh Hotel.

The next quarterly meeting in Scotland will be held in the hall of the Faculty of Physicians and Surgeons in Glasgow on the second Thursday of March.

Part Fourth.

PERISCOPE.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By WILLIAM CRAIG, M.D., F.R.S.E., Lecturer on Materia Medica, Edinburgh School of Medicine, etc., etc.

A SUBSTITUTE FOR QUININE.—*The Moniteur des Produits Chimiques* is informed that Professor Fischer, of Munich, after an extended research on the nature and properties of quinine, has discovered that a substance may be extracted from coal-tar which exercises on the human organism an action identical with that of quinine. The substance appears in the shape of a white crystalline powder. Administered in cases of fever it has the effect of rapidly lowering the temperature, and its efficacy in this respect is stated to be so remarkable as to permit the use of ice to be dispensed with. In the stomach this wonderful powder assimilates with even greater facility than quinine.—*The Chemist and Druggist*, 2nd October 1886.

EULYLYPTOL.—This is the name given by Dr Schmeltz to a mixture consisting of six parts of salicylic acid to one each of carbolic acid and oil of eucalyptus, which he considers preferable as an antiseptic to iodoform, corrosive sublimate, or carbolic acid. Dr Schmeltz considers that a chemical combination takes place between the ingredients, since carbolic acid cannot be detected in the mixture. It is described as having a strong aromatic odour and an acrid burning taste, and as being nearly insoluble in water, but very soluble in absolute alcohol, ether, chloroform, and a mixture of equal parts of alcohol and glycerine. It is also soluble in ammonia and alkaline solution. According to Dr Schmeltz, it completely arrests the fermentation of all putrescible substances, a small quantity added to urine, under any condition, being sufficient to preserve it during a month.—*Pharmaceutical Journal*, 3rd October 1886.

LANOLIN.—In the *British Medical Journal* for 23rd October there is a very instructive paper on this substance, which is attracting so much attention in the present day in connexion with

the formation of ointments. The paper is by Professor Liebriech, of Berlin. "Lanolin," he says, "is a cholesterine fat which differs from the ordinary fat of the panniculus adiposus, through its containing, instead of glycerine, the brilliant crystals of cholesterine. Besides cholesterine these fats contain the substances which are similar to cholesterine, but have nothing in common with glycerine. Lanolin absorbs water very readily. Lanolin can be abstracted from the fat contained in the wool of sheep. Lanolin can be rubbed into the skin with great ease. When the rubbing is repeated several times the skin becomes distinctly softer. When lanolin is used on mucous surfaces it never forms a scab." Professor Liebriech represents lanolin as a "new fatty substance, neutral, miscible with water, highly absorbable by the skin," and "predicts for it a long career of great usefulness in the dermatological therapeutics and in the hygiene of the skin."

BINIODIDE OF MERCURY.—In the *British Medical Journal* for 30th October Dr C. R. Illingworth recommends the "biniodide of mercury as a specific for scarlet fever and diphtheria." He says: "The efficacy of the medicine depends, I think, upon the diffusible potassic iodide carrying the germicide biniodide to every portion of the circulation."

CHLORIDE OF SODIUM IN THE TREATMENT OF BRIGHT'S DISEASE.—Dr Allard Memminger (*New York Med. Journal*, 31st July 1886) recommends the use of sodium chloride in the treatment of Bright's disease. He claims that this drug will produce a decrease in the amount of albumen and an increase in the amount of urea, and a very marked increase in the quantity of chlorides eliminated. He orders 10-grain doses of the chloride in gelatine capsules three times a day, by preference one hour after or before meals, and directs the patient, on the slightest intimation of nausea, immediately to resume a recumbent posture, and there remain for an hour or so. The second day of the treatment he increases the dose to two capsules three times a day, and every other day he increases by one capsule until the patient is taking five capsules three times daily. About this time he claims that the good effects of the treatment will be apparent, not only from the improvement in subjective and objective symptoms of the patient, but from the improvement in the condition of his urine. Albumen will, of course, at this period be found still in abundance if the case is at all a grave one. At this juncture Dr Memminger directs the chloride to be diminished in quantity, and now gives the patient two capsules three times a day, stopping it temporarily if any nausea is produced. If the albumen is again found to increase, and the urea and chlorides diminished, large doses are at once resumed. The effects of the treatment are found in the reduction of the albumen, an increase in the urea and chlorides eliminated, and the removal of headache, œdema, low spirits, general weakness, and

anaemia. He claims that it is harmless if properly administered; its effects are uniform, and it may be employed as an adjunct to all recognised modes of treatment without detriment to the patient.—*The Therapeutic Gazette*, 15th October 1886.

KOLA NUT.—We have in several previous issues of the *Gazette* called attention to the action of the kola nut, and a paper recently published by Dr N. Hudson (*Med. Times*, 26th June 1886) still further encourages more definite trials of this remarkable agent. Dr Hudson reports a case of intermittent and irregular heart's action, with dyspnoea and faintness occurring as a consequence of endocarditis in a rheumatic subject, in which the use of about 150 grains of kola paste, taken once or twice a day in hot milk, prepared like chocolate, causes great relief. The heart's action became more regular, dyspnoea and faintness disappeared, and the violent headaches to which the patient had been previously subject were prevented. The employment of the kola seemed to be satisfying to the appetite, and the bodily weight increased from 98 lbs. to 105 lbs. No marked change was observed in the character of the urine, the quantity voided being somewhat increased, but the total quantity of urea excreted remained at 10 or 12 grammes daily. The action of kola is generally attributed to the caffeine which it contains, but Dr Hudson states that in this case the caffeine and convallaria had been employed without success, while the action of digitalis was only temporary and palliative.—*The Therapeutic Gazette*, 15th October 1886.

COCAINE IN THE TREATMENT OF GONORRHOEAL OPHTHALMIA.—Mr A. Leahy reports (in the *Indian Medical Gazette*, July 1886) two cases of gonorrhoeal ophthalmia, in both of which the greatest benefit was derived from application of cocaine. As it is well known, in gonorrhoeal ophthalmia, it is of primary importance to lessen the inflammation rapidly, to relieve the intense congestion of the conjunctival vessels and reduce chemosis, and by so doing prevent ulceration and sloughing of the cornea. Last, but not least, is the relief of the ocular and circum-orbital pain which, by its persistence, greatly depresses the patient and prevents sleep. Mr Leahy employed a mixture composed of $\frac{1}{2}$ grain of sulphate of atropine and 4 grains of sulphate of cocaine incorporated with 100 grains of vaseline. This mixture was introduced beneath the upper eyelids; and after three days' treatment the chemosis rapidly became less, the discharge diminished in quantity, the pain completely disappeared, and the cornea, which had been hidden by the chemosis, became visible.—*The Therapeutic Gazette*, 15th October 1886.

COLD APPLICATIONS TO THE PRÆCORDIA IN FEVER.—In the *Practitioner* (August 1886) Dr F. Y. Grigorovich publishes the results of this mode of treatment of fever employed in the Rostoff

Military Hospital. His observations were made on uncomplicated cases of typhoid fever. He finds that the respiration, at first somewhat quickened and rendered irregular by the reflex actions, subsequently becomes slower. At the end of the application of the ice and the next morning it is deeper and more regular, but somewhat slower than before the ice was applied. The general conclusions regarding the effect of applying cold to the region of the heart are as follows:—1. The cold undoubtedly reaches the heart itself, and thus produces an effect on its action. 2. This effect is particularly noticeable when the cardiac beats are increased in frequency in consequence of a high temperature quickly attained, and where a certain degree of sensitiveness to a high temperature exists. 3. The effect of cold is not marked at the end of a prolonged attack of fever, pathological changes having by that time probably become established in the cardiac muscle. 4. The local application of cold is only capable of protecting the heart-muscle from the effects of a high temperature when it is applied assiduously from the commencement of the disease. 5. Under its influence the action of the heart improves, the number of beats diminishes, while their force and amplitude increase. 6. Cold applied to the region of the heart diminishes the gravity of the *typhoid* condition and favourably influences the respiration. 7. With regard to the effect of cold applied to the region of the heart on the course of the general temperature the author cannot at present express a decided opinion, as he did not investigate the question; but, in the results which he obtained, indications may be found of the possibility of its causing some diminution of the temperature.—*The Therapeutic Gazette*, 15th Oct. 1886.

MEDICAL PERISCOPE.

By FRANCIS TROUP, M.D.

DIAGNOSTIC AND ÆTIOLOGICAL STUDIES IN THE HAGENAU HOSPITAL.—Biedert (*Berlin. Klin. Wochensch.*, No. 42, 1886) gives, under this heading, a new process for demonstrating the presence of isolated tubercle-bacilli in sputum with greater certainty. He takes a tablespoonful of the suspected expectoration and adds thereto two tablespoonfuls of water and fifteen drops of a concentrated solution of soda; the mixture is boiled till it is quite fluid, and then other four spoonfuls of water are added, and boiling is again conducted till the resulting liquid is quite smooth, save from the presence of isolated small particles. After cooling, if the mass is not sufficiently thin and limpid, water can be added at pleasure.

The preparation is set aside for two or three days in a conical glass; by that time precipitation of all the dense constituents has taken place, and the supernatant fluid has deposited all its bacilli, and can now be decanted from the dense precipitate. One can

now with the platina needle or (öse) loop take up a drop of this sediment and duly rub and spread it thinly on a cover-glass, which is dried and passed through the flame in the usual manner, and is ready for the staining process.

But as the treatment with soda makes the albumen of the sputum more or less soluble, if one has not a certain knack and skill in the drying, the layer will be very likely to scale off the glass when undergoing immersion in the staining fluids. This may be prevented by rubbing a little fresh egg albumen along with the drop of sediment on the cover-glass before it is dried and passed through the flame.

If there were many bacilli in the original sputum, a proportionally greater number will now be visible in every field of view. If the number was originally small, precipitation has given them in a concentrated form, and, of course, they are more easily discovered. Biedert says that if he took sputum free of bacilli, and added only a few drops of one containing them, and then treated the mixture in this mode, he could always demonstrate their presence without difficulty.

A remarkable fact in this new method is that more bacilli are to be found in the sediment at the end of two or three days than afterwards. From various comparative experiments, Biedert is sure that this behaviour is owing to an alteration in the "colourability" of the bacilli brought about by the action of the soda. It seems as if some albuminous envelope, which held back the colour when the stained glass was undergoing treatment with acid and alcohol, had been removed. This more ready decolorization is more marked when the bacilli have been stained in the Ehrlich method than in Neelsen's.

Biedert considers that modifications in the colourability of the bacilli are possible, and explain cases which have relatively few bacilli to show, while the diseased process they accompany is an active one. He does not think that the opinion is tenable, that a few micro-organisms can occasion such wide-spread mischief, or that the bacilli, their work being done, have again withdrawn themselves, or that they exist only in the form of non-demonstrable spores. This alteration occasioned by alkalies renders the process unavailable for sections.

Biedert says that this process as a trustworthy bacillus test is important in two ways. The one is purely practical, because one can more quickly and conveniently attain certainty of the nature of a doubtful lung-affection, without the wearisome search of many cover-glass preparations. The expectoration of days can easily be collected, and examine its concentrated extract. The other important point is more of a scientific kind, and consists in this, that more convincing proof may be acquired whether any disease of lung is entirely, or only in certain epochs, free of bacilli.

Note.—In the *Edinburgh Medical Journal* of November 1886

there is a paper by Dr R. W. Philip, in which gently heating the sputum is recommended as a shorthand way of precipitating its micro-organismal contents. The translator has tried and found it very satisfactory, and much more *expeditious* than merely allowing the sputum to stand for days to settle, which it does in course of time, and the precipitate contains the whole of the tubercle-bacilli which remain unaltered, in staining properties, for years. In Dr Philip's way one needs to be cautious not to heat too strongly, else the albumen coagulates, and the precipitate is lumpy and granular more than it need be. So that without the addition of the soda recommended by Biedert, *mere heat or time* will secure a rich deposit of all the bacilliferous contents of a sputum, and with their peculiar reactions towards staining agents unimpaired and undamaged. The "Platinöse," so often mentioned in German works, is a looped needle of platinum wire.

OCCASIONAL PERISCOPE OF DERMATOLOGY.

By W. ALLAN JAMIESON, M.D., F.R.C.P., Extra Physician for Diseases of the Skin, Edinburgh Royal Infirmary; Lecturer on Diseases of the Skin, Edinburgh School of Medicine.

THE PARASITE OF FAVUS.—From cultivations of the crusts from favus Quincke has come to the conclusion that the morbid appearances can be produced by at least three different fungi. Only one of these was hitherto found in each individual case. He distinguishes the three favus fungi as α , β , γ . Each presents peculiarities of its own, as to the form of the elements and the degree of temperature necessary for its successful cultivation. It is of general interest that in a disease previously looked on as uniform a threefold etiological basis has been observed. The same may hold good for diseases of internal organs which are believed due to micro-organisms. The preparations in connexion with Quincke's discovery were exhibited at the Medical Congress, 1886. —*Monatschafte für praktische Dermatologie*, No. 7, 1886.

ARSENICAL ERUPTIONS.—The undue estimation in which arsenic is held by many as a remedy in affections of the skin in general has been of late seriously questioned, and there is a likelihood of its true value being better ascertained, and those forms of disorder being more accurately determined in which its administration will prove advantageous. As a result of the attention now being directed to the question, Dr Morrow has examined into the eruptions which are due to arsenic, and concludes that those which follow its internal and external use are similar. The external application causes a dermatitis in no way to be distinguished from that induced by other local irritants. This often assumes the form of an eczema. Internally arsenic may cause: 1. *Erythema*—

This is more frequently the commencing than the final stage of the arsenical eruption. It may resemble the rash of measles or scarlet fever, and ends in desquamation. 2. *Papular*—The papules are discrete, but may form disseminate patches, and, though less coppery, may resemble a papular syphiloderm. The parts affected by preference are the face, neck, hands, and genital organs. The eruption usually disappears in five or six days, followed by furfuraceous desquamation. 3. *Urticarial*—This is, according to Gourbeyre, one of the most frequent forms. The wheals are white or rosy-red, and extremely pruriginous. 4. *Vesicular*—This may sometimes assume an eczematous character, which, according to G. Balfour, may prove exceedingly obstinate. Herpes zoster, too, appears to be more often observed in those who have been taking arsenic than in such not subjected to this medication. 5. *Pustular and Ulcerative*—This resembles variola, the lesions terminating in crusts or ulcerations leaving cicatrices. 6. *Brownish Pigmentation*—Certain grayish or brownish discolorations, which are especially liable to occur upon the face and various parts of the body after a prolonged use of arsenic. As to the cause of arsenical eruptions, the drug is partly eliminated by the glands of the skin. It is also supposed to modify cell nutrition through its influence upon the peripheral nervous plexuses. It may thus occasion disorders of the capillary circulation and disturbance of the nutrition of the skin. The treatment in the main consists in suppressing the offending cause.—*Journal of Cutaneous and Venereal Diseases*, July 1886.

CHRYSOPHANIC CONJUNCTIVITIS.—Trousseau points out that the solution of chrysophanic acid in traumaticine introduced by Auspitz may, like ointments, cause an inflammation of the conjunctiva. Such inflammation is double, though one eye is often most severely affected. There is blepharospasm, much lachrymation, with injection of the conjunctiva, but there is no purulent secretion, and the most that happens is that the eyelids may be slightly adherent in the morning. All the phenomena, as a rule, disappear spontaneously at the end of eight to ten days, but the duration can be abbreviated and the discomfort lessened by the constant application of compresses, moistened with a 4% boracic acid solution. From experiments on rabbits, and the observation of some cases in which inoculation seemed to be unlikely, he concludes, with some reserve, that this symptom is due to absorption of the remedy.—*Annales de Dermatologie et de Syphiligraphie*, May 1886.

EXCORIATIONS OF THE NOSTRILS.—Baron thinks that the term *eczema narium*, often applied to the above, is misleading, as it only represents a less important part of the disease. It is really in most cases a furunculosis of the sebaceous glands connected with the vibrissæ. Persons who have numerous stiff hairs inside the nostrils are more liable than those with a few soft ones. It is most obstinate if it attacks the corner between the ala and septum nasi,

as here there is more chance of stagnation of the nasal secretion. The aims of treatment are—1, to prevent the formation and increase of scabs; 2, to protect the epidermis from further solution of continuity; 3, to sterilize the nostril. Epilation is denounced. Tampons of cotton dipped in a solution of corrosive, 1 in 1000 or 1 in 2000, are fitted to each nostril, one only being dealt with at a time, and allowed to remain in for two hours, then removed, and the other nostril operated on. This may be done two or three times daily at first; later, one tampon for each nostril may be sufficient. If the corrosive causes irritation its use may be temporarily discontinued, and a 10 per cent. boracic acid ointment made with vaseline substituted. If the disease thus cured threatens to recur, washing with the 1 in 2000 is sufficient to prevent it. Where scrofulous children are affected with nasal excoriation, tampons smeared with a lead plaster and vaseline ointment suit better than the corrosive solution.—*Bristol Med. Chir. Journal*, March 1886.

ECZEMA OF THE EYELIDS.—Allen states that eczema may attack the lids when other regions of the face, and possibly of the body, are at the time quite free. The treatment consists in applying to the closed lids a 3 per cent. solution of nitrate of silver, and drying immediately with a linen cloth, repeating the process several times at each sitting, all vesicles and pustules having been previously opened. The applications are made at first each day, and as improvement goes on every second day. After a few brushings there is scarcely any pain. An ointment composed of *Ol. cadini* ʒj., *pulv. zinci oxidi* ʒjss., and vaseline ʒj., should be constantly applied in the intervals. If this ointment should prove irritating to the eyes, a mild white precipitate ointment may be substituted. Such constitutional remedies as are indicated may be employed in addition.—*Journal of Cutaneous and Venereal Diseases*, July 1886.

MOLLUSCUM CONTAGIOSUM.—The observations of Allen in fifty cases of this complaint would seem to argue strongly in favour of its communicability. In one of the infant asylums of New York he found about 100 cases of scabies, and while examining these he discovered one case of molluscum. The matron remembered that there were many more, and thirty were found. A year before a girl came in with the tumours on her face; in course of three months these had enlarged, and many other girls were then similarly affected. The co-existence of ordinary warts was inquired into, and sixteen suffering from these were also found. Eight had warts alone, eight molluscum also. Inoculation with material from the molluscous tumours on some of the children, and on Allen himself, gave negative results. Some of the little growths were seen on the vermilion border of the lips, and this he regards as a strong clinical point against the theory of their origin in the sebaceous glands. The disease in this instance imported by one

girl affected in all fifty.—*Journal of Cutaneous and Venereal Diseases*, August 1886.

GANGRENE CAUSED BY IODINE COLLODION.—The application of iodine collodion to a frost-bitten finger in Vienna last year, it will be remembered, led to a loss of the finger, and the suicide of the physician from mortification on account of the unfortunate notoriety given to the case. Dr Vogelsang of Biel now reports (*Memorabilia, Med. Chir. Rundschau*.) a case in which iodine collodion painted over a large surface was followed by gangrene of the skin and sloughing. In one case collodion was applied over a gland which had been painted with iodine. The result was a slough and an ugly ulcer.

GONORRHOEAL WARTS.—Nussbaum washes these twice daily with salt and water, and then sprinkles them with calomel. The reaction of the residual sodium chloride and calomel produces mercuric chloride. This treatment, he claims, cures the warts rapidly, without causing pain or detention from business.—*Medical and Surgical Reporter*.

Part Fifth.

MEDICAL NEWS.

ROYAL COLLEGE OF PHYSICIANS AND SURGEONS, EDINBURGH, AND FACULTY OF PHYSICIANS AND SURGEONS, GLASGOW.—The following gentlemen passed their final examination for the triple qualification in Medicine and Surgery at the sittings held in October 1886, and were admitted L.R.C.P. & S. Ed., and L.F.F.P. & S., Glasgow:—Walter Woodworth White, Edinburgh; Thomas Joseph Haythorne, Edinburgh; Izset Mead, London; Emma Littlewood, London; Ernest Hugh Fitzpatrick, Edinburgh; Bernard MacDonogh, Isle of Wight; John Morton, Edinburgh; John Samuel Bryars, Belfast; George James Scantlebury, Edinburgh; James Fraser Davidson, Glasgow; Alfred E. Mifsud, London; Edward Taloon Hawkesworth, Edinburgh; James Moir, Glasgow; James Philip Robert Jamison, Co. Antrim; Richard Theodore Wheeler, Edinburgh; Thomas James Henry, Edinburgh; Alan Joseph, Edinburgh; Donald Malcolm Campbell, Edinburgh; Alexander Eugene Henry Watson, Portobello; James Thomas Chamberlain, Edinburgh; John Fort Challinor, Westboughton; Harold Gurney, London; Idrice Amir Goumany, Mauritius, Port Louis; Louis Frederick Showman, Edinburgh; John William Parry, Bothwell; John Owen Jones, Denbighshire; Patrick Joseph O'Leary, Co. Cork; Lauchlan Mitchell Dunlop, Blairmore; Edmund Herbert Corder, Birmingham; Edward Harkness, Northants.; Sampson J. R. Greville, Edinburgh; F. J. Seery, Fredrickton, N. B., Canada; Vincent Frederick Lennane, Wexford; James Whitelaw Alexander, Leeds; Arthur Colin Mackenzie, Birmingham; Dan. A. Smith, Edinburgh; William A. K. Hanna, Gerinish, So. Uist; David Milligan Wilson, Ayr; Peter Sturrock, Pitlochrie; Henry William Webbe Richardson, Edinburgh; Louis Pilkington Jackson, London; Kanta Prasad, Edinburgh; Melville Campbell Wright, Edinburgh; Charles Malcolm, Leeds; Jos. Iredale, London; George Samuel Armstrong, Flesherton, Canada; James Metcalfe, Bradford; William Louis Byham, London.

ROYAL COLLEGE OF PHYSICIANS, EDINBURGH.—The following gentlemen passed their final examination for the degree in Medicine at the sittings held on 5th

November 1886, and were admitted L.R.C.P. Ed.:—Henry Hugh Williams, Enfield, Middlesex; Reginald Koettlitz, Darlington; John O'Keeffe, Newport, Mon.; Alfred Stanley, Walsall; Alfred Alexander Smith, Guy's Hospital, London; Alexander Rae, Stonehouse, Lanarkshire.

UNIVERSITY OF GLASGOW.—DEGREES OF M.B. AND C.M.—Pass List, October 1886.—Third Professional Examination.—William G. Barras, David R. Barrie, Alexander Campbell, Hedley R. V. Crossfield, Thomas J. Davies, John Dobbin, R. Jardine Freebairn, Charles C. Grant, Thomas Kirkland, Daniel Laird, George Lapraik, Joseph Mechan, John Macarthur, James M'I. M'Call, William M'Millan, Thomas L. Paterson, David J. Penney, John W. W. Penney, John Porter, John Reid, Alexander Shanks, Robert D. Walker, William Wallace, M.A. The following have also passed in Pathology:—John A. Anderson, Robert Anderson, Archibald Auld, Thomas M. Bonar, Robert Clarke, Hugh Dickie, M.A., John Dickinson, John E. Duncan, Alex. W. Dunlop, M.A., John M'I. Eadie, William D. Erskine, Frederick Fedarb, John F. Fergus, M.A., James A. Goodfellow, Joseph F. Hughes, Hugh W. Kilpatrick, James F. D. Macara, John Mackinnon, William H. M'Kinstry, Donald Maclean, A. Lewis M'Millan, James C. G. Macnab, Llewellyn M'Whannell, R. Barclay Ness, M.A., Alexander G. Park, Robert Robertson, William Robertson, John S. Rosser, Andrew Sprott, George Thomson, Joseph B. Wallace, Robert Wilson, Robert Zuill. The following gentlemen have now passed in all the Subjects of the Final Professional Examination:—Alexander Dewar, Harry Gray, Samuel Charles Harris, William Millar, John Rowatt.

GENERAL MEDICAL COUNCIL ELECTION.—November 22nd was the last day for the return of the voting papers in the election of a Scottish Representative to this Council. The votes were counted on the 23rd, when it was found that they stood thus:—Dr Bruce, Dingwall, 642; Dr Morton, Glasgow, 596; Dr Sinclair, Dundee, 414,—showing a majority for Dr Bruce of 46 over Dr Morton and 228 over the other candidate.

SCOTCH AND ENGLISH CERTIFICATES.—Doctors have often to give certificates in England when there may be dubiety about the patient's case. But in Scotland a certificate attains to the importance of an oath, for we must swear on *soul and conscience*—That, etc. Now, is there a free-born Englishman who would condescend to swear on soul and conscience in an ordinary certificate. If there be I never knew him. Having been more than 30 years in practice in England, my soul and my conscience rebels, and not lightly, against such an unnecessary swearing. It demeans the doctor who, in writing, swears it. If asked to give such a certificate in a trifling case he cannot. If once done, his name is ever after undervalued, and he will be tempted to use much more English than soul and conscience. If a very serious case he may have to

yield; but it is clear that the medical profession in Scotland is, in this matter, in the fifteenth or some other century instead of this year of grace, 1886. I trust that the Lord Advocate, J. H. A. Macdonald, and Sir Herbert Maxwell, for both of whom I have votes, will move to have this objectionable and very demeanable swear removed from the Scotch statutes, so that in Scotland doctors may ere long be on a par with those of England.—J. CARRICK MURRAY, M.D., Stranraer.

MEDICAL CONGRESS (September 1887) IN CONNEXION WITH THE SOUTH AUSTRALIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION. *Preliminary Announcement.*—The South Australian Branch of the British Medical Association proposes to inaugurate during the month of September 1887 a short series of special meetings for the discussion of subjects relating to Public Medicine, Hygiene, Medicine, and Surgery. In the month of September the International Jubilee Exhibition to be held in Adelaide will be fully established, and the season is perhaps the most favourable for visiting South Australia. The sittings will be open to all accredited members of the profession throughout the world, and it is considered especially desirable that gentlemen resident in, or visiting the neighbouring colonies, should be largely represented. The committee cordially invite the contribution of papers to initiate discussion, and will be much obliged if intending contributors will indicate the particular subjects they propose to treat. In connexion with this Congress and the Exhibition, it is intended to hold a *Conversazione* and other entertainments, and conjoint trips to objects of interest in the neighbourhood of Adelaide will be arranged.

LARGE TUMOURS AND GAS.—Dear Mr Editor,—I have been much interested in reading the accounts of the very large tumours, some of which have lately been extracted, as the dentists say, with *gas*. In my elegantly-appointed private hospital (terms reasonable, circulars sent on application) I also extract with *gas*. On one occasion a very grievous accident happened to a patient, a lady of wealth and great refinement. After having extracted a truly enormous tumour, weight, with contents, guessed at, or, rather, accurately estimated at two hundred pounds, I directed my assistants to place the patient in bed. Having replaced my instruments in my case I went to the bed to examine the patient, and was somewhat astonished to find that my assistants had mistaken the largest portion of the patient, which was the tumour, for the patient, and placed it carefully in bed, surrounded with bottles of hot water. The patient, weighing but a few pounds, was found in a tub in the yard swimming about in the contents of her own tumour. My Extracting Hospital is in good condition, and well provided for the extraction of tumours of all kinds.—Very truly yours, SIMKINS, M.D. P.S.—The *contretemps* reported above is not likely to occur again, as the

assistants were at once discharged.—*Philadelphia Medical Times*, Aug. 7th, 1886.

LONGMORE HOSPITAL FOR INCURABLES.—The Queen has been pleased, at the request of the Directors, to become Patroness of the Edinburgh Association for Incurables.

OBITUARY.

THE LATE PROFESSOR DYCE DAVIDSON.

WE regret to have to record the death of Professor Dyce Davidson, of Aberdeen, which took place on 22nd October last, under circumstances peculiarly sad. Dr Davidson had delivered part of the second lecture of the session, to all appearance in good health and spirits, when he was seized with what appeared to the class to be only faintness, causing him to stagger and sit down. Unconsciousness with stertorous breathing rapidly set in, and he sank an hour after the seizure, surrounded by several of his colleagues who had been summoned to his aid. It was concluded that the cause was hæmorrhage at the base of the brain, and this opinion was confirmed by the examination, which showed extensive effusion of blood and a diseased condition of the arterial coats. Dr Davidson was only 41 years of age, but had suffered greatly for years from repeated attacks of rheumatism and gout. Dr Davidson was a native of Aberdeen, son of Mr Charles Davidson, the well-known pharmaceutical chemist of that city. He graduated in Arts in 1863, and in Medicine in 1866, on both occasions with highest honours. Soon after commencing practice in Aberdeen he was appointed Surgeon to the Eye Institution, and in 1870 Ophthalmic Surgeon to the Royal Infirmary. As Ophthalmic Surgeon he enjoyed the confidence of the profession and of the public in the Aberdeen district. In 1870 he was also appointed Assistant to Dr Harvey, Professor of *Materia Medica* in the University, a subject to which his attention had been early directed, and he was, we believe, the first in our Universities to organize and conduct a course of Practical Pharmacy. On the resignation of Dr Harvey in 1878, Dr Davidson was appointed by the Crown as Professor of *Materia Medica* in Aberdeen University, and has since that time discharged the duties of the Chair with much acceptance. Dr Davidson was the author of several contributions to Ophthalmic Surgery in the *Annales d'Oculistiques*, and, jointly with Dr Harvey, of a *Syllabus of Materia Medica*. It is not given to many teachers thus to die at their post. The death of Dr Davidson has caused universal regret in Aberdeen, where he was

greatly beloved by a wide circle of professional and private friends.

ANDREW HOWDEN BALFOUR.

WE regret to announce that Andrew Howden Balfour, Surgeon, died at Portobello on the 17th ult. An obituary notice will appear in next month's Journal.

CORRESPONDENCE.

To the Editor of the Edinburgh Medical Journal.

SIR,—I would ask permission to draw attention to a paper which appeared in your Journal as far back as October 1885, and which I have only recently noticed.

Dr John A. Macdougall, consulting-surgeon to the Cumberland Infirmary, in the commencement of his paper "On Certain Cases of Rapidly Growing Bronchocele," quotes from the article on "Goitre" in *Quain's Dictionary of Medicine*, of which article I am the writer, and so distorts, apparently for his own satisfaction, the opinion given by me that I must put some of his quotations side by side with what does appear in the article. I am sorry that it should be necessary to have to do this, but not only do I resent having my writings unfairly depreciated, but I wish to show that *Quain's Dictionary* stands unassailed in its authority, even on the one point—fatality in goitre.

Dr Macdougall's paper commences: "Bronchocele or goitre is so prevalent and, as a rule, so unimportant a disease, that by the profession and the public alike it is regarded as one well-nigh unattended by risk. And this feeling of security is demonstrated, and of necessity largely increased, when we find a London specialist, who from his opportunities and his position has undoubtedly most intimate knowledge of the subject with which he deals, thus quoting from *Quain's Dictionary* :—

Dr Macdougall's Quotation.

"The prognosis in goitre is very favourable. The occurrence of death from suffocation, due solely to the effects of a goitrous enlargement, is extremely rare. It occurs in those countries where little or no treatment is tried, the tumours being allowed to attain an immense size." And again, "all varieties" (of goitre) "are amenable to treatment, especially the cystic."

Quain's Dictionary.

"The prognosis in goitre is very favourable. The occurrence of death from suffocation, due solely to the effects of a goitrous enlargement, is extremely rare. It occurs in those countries where little or no treatment is tried, the tumours being allowed to attain an immense size. *The disease is more likely to endanger life when the gland passes behind the trachea and completely embraces it.* All varieties of goitre are amenable to treatment, especially the cystic."

Dr Macdougall continues : " That these propositions do not always hold good, and that more often than we might expect bronchocele may give rise to very formidable symptoms and disastrous results, the cases I now relate will show."

The sentence which Dr Macdougall leaves out of the paragraph, and which I have now italicised, has more connexion with the histories of Dr Macdougall's four cases than any other sentence in the paragraph. Taken in conjunction with a previous sentence in the article on "Goitre" (see "Symptoms and Complications"), the connexion is still stronger. But Dr Macdougall, in making his story good, does not draw attention to it. It is as follows : " More serious symptoms are sometimes present, namely, dysphagia and dyspnœa. The former is rarely present, except when the tumour has reached an immense size, or when it presses on the œsophagus, as happens when the lateral lobes meet behind the gullet. Dyspnœa, a more common symptom, may be due to pressure from the goitre on the front and sides of the trachea (found more commonly in young people before the tracheal rings have gained much power of resistance), or on both recurrent laryngeal nerves, causing partial paralysis of the abductors of the vocal cords, or to a portion of the gland passing behind the trachea, or becoming enlarged beneath the sternum."

In Dr Macdougall's four cases the ages were 12, 14, 19, and 20 years. In one case he writes : " The examination demonstrated the extension of the tumour behind the sternum, and the pronounced way in which it encircled and directly compressed the trachea."

In another, " the calibre of the trachea was lessened in a most marked way by the pressure of the growth ;" and in a third, " with such an unyielding growth embracing it, and in which the recurrent laryngeal nerves were pretty certainly involved, the suffocative symptoms had origin."

It will be noticed that Dr Macdougall's logic is defective. In one place he states that the disease is unimportant ; in another, that goitre gives rise to disastrous results.

Apart from Dr Macdougall's misrepresentation of the opinion on the fatality of goitre given in *Quain's Dictionary of Medicine*, four cases of death are undoubtedly many for one surgeon to meet with even in twelve years, and though he be a consultant. It appears that the late Professor Spence said in 1875, when he was called in consultation by Dr Macdougall to one of these fatal cases, that he had only seen one such other case. Dr Spence, as the most noted tracheotomist in the North, should have met with other cases were the fatality frequent.—I am, Sir, yours faithfully,
W. PUGIN THORNTON.

18th October 1886.

To the Editor of the Edinburgh Medical Journal.

SIR,—I have to thank you for your courtesy in forwarding to me the proof of Mr Pugin Thornton's letter, which reached me two days ago.

I regret exceedingly that in it he should have seen fit to charge me with "distorting" his opinions for my own satisfaction, and "unfairly depreciating" his writings. Such intentions were certainly never mine, and I apologise freely if I have, in omitting the paragraph to which he draws attention, not appreciated its importance and the fulness of the THOUGHT that produced it; for even now, emphasized as its value might be by the pointed attention directed to it, I entirely fail to see in it any sufficient note of warning as to the possible gravity of goitre. Taken in connexion with the sentences which precede it, it does no more than indicate how death from suffocation, stated in one of them to be EXTREMELY RARE, is brought about. Holding this as its interpretation, I considered its quotation in my paper as unnecessary.

This misunderstanding of another's statements, however, does not rest with me alone, for in his attempt to depreciate the value of my logic Mr Thornton fails to note that I thus enunciate the opinion to which he makes reference. "Bronchocele or goitre is so prevalent, and AS A RULE, so unimportant a disease, that by the profession and the public alike it is regarded as one well-nigh unattended by risk." The phrase "as a rule" is perfectly sufficient to justify me, without defect in just reasoning, to point strongly to those exceptional cases in which "goitre gives rise to disastrous results."

The quotation I borrowed from Mr Thornton's article was from the part of it which deals with the *prognosis* of the disease, and it was therefore quite unnecessary for me to notice his treatment of its symptomatology, unless I desired to quote his opinions *in extenso*.

The keynote of his management of the whole subject seemed to me, and seems now, to have origin in a belief of the extreme rarity of a fatal result in cases of goitre; and this persuasion is still further indicated by his present marked allusion to the opinion expressed by Professor Spence in a case seen by him with me in 1875.

That opinion had, however, reference to the probable *nature* of the disease (malignant bronchocele), and not to his experience of its course in certain of the simpler and more common forms. That he was called upon to perform tracheotomy, and that he had witnessed fatal results in several cases of bronchocele, I have personal knowledge.

It may interest Mr Pugin Thornton to know that at the meeting of the Carlisle Medical Society at which my paper was read, *four* of the members present—one-third of the whole number—spoke of fatal cases which had come under their own observation.

Since then it has happened to me to relieve by operation another case in which life was seriously imperilled, and to obtain from Dr Wilson of Penrith a bronchocele removed post-mortem from a woman, in whom it produced such dyspnœa as led to her death. With the knowledge, then, that even a comparatively limited experience has brought, it is impossible for me to subscribe to the opinion that "*Quain's Dictionary* stands unassailed in its authority, even on the one point—fatality in goitre."—I am, Sir, yours faithfully,

J. A. MACDOUGALL.

CARLISLE, 16th Nov. 1886.

COCAINE ADDICTION.

To the Editor of the Edinburgh Medical Journal.

MR EDITOR,—If any reader of your Journal has met with a case of Cocaine Addiction and will send me the fullest details at his command, I'll thank him for the courtesy, reimburse him for any expense incurred, and give him full credit in a coming paper.

J. B. MATTISON, M.D.

BROOKLYN, 314 STATE ST.

PUBLICATIONS RECEIVED.

- NORMAN CHEVERS, C.I.E., M.D.,—A Commentary on the Diseases of India. J. & A. Churchill, Lond., 1886.
- Life of Sir ROBERT CHRISTISON, Bart. Edited by his Sons. Vol. II. Wm. Blackwood & Sons, Edin., 1886.
- W. BRUCE CLARKE, M.A.,—Diagnosis and Treatment of Diseases of the Kidney. H. K. Lewis, Lond., 1886.
- HERMANN COHN, M.D. & Ph.D.,—The Hygiene of the Eye in Schools. Simpkin, Marshall, & Co., Lond., 1886.
- Congrès Périodique International des Sciences Médicales, Tomes 1-4. F. Hegel & Fils, Copenhagen, 1886.
- J. FAYRER, K.C.S.I., LL.D., M.D., F.R.S.,—Rules regarding Defects of Vision. J. & A. Churchill, Lond., 1886.
- DAVID FERRIER, M.D., LL.D.,—The Functions of the Brain. Smith, Elder, & Co., Lond., 1886.
- JAMES FINLAYSON, M.D.,—Clinical Manual for the Study of Medical Classes. Smith, Elder, & Co., Lond., 1886.
- J. M. FOTHERGILL, M.D.,—A Manual of Dietetics. H. K. Lewis, Lond., 1887.
- W. R. GOWERS, M.D., F.R.C.P.,—A Manual of Diseases of the Nervous System. Vol. I. J. & A. Churchill, Lond., 1886.
- MESSRS GEORGE, CHARLES, and ALBERT GREENWELL,—The Veterinary Pharmacopœia. Baillière, Tindall, & Cox, Lond., 1886.
- G. H. HAMBLETON, L.K.Q.C.P.I.,—The Scientific Prevention of Consumption. J. & A. Churchill, Lond., 1886.
- D. BERRY HART, M.D., F.R.C.P.E., and A. H. F. BARBOUR, M.A., B.Sc., M.D., F.R.C.P.E.,—Manual of Gynecology. W. & A. K. Johnston, Edin., 1886.
- Dr AUGUST HIRSCH,—Handbook of Geographical and Historical Pathology. New Sydenham Society, Lond., 1886.
- Index Catalogue of the Library of the Surgeon-General's Office, U.S. Army, Vol. VII. Washington, 1886.
- RUDOLF LEUCKHART,—The Parasites of Man. Young J. Pentland, Edin., 1886.
- F. W. LOWNDEN, M.R.C.S.E.,—Prostitution and Venereal Diseases in Liverpool. J. & A. Churchill, Lond., 1886.
- WM. C. MACLEAN, M.D., C.B.,—Diseases of Tropical Climates. Macmillan & Co., Lond., 1886.
- T. M. MADDEN, M.D.,—On Child Culture. Fannin & Co., Dublin, 1886.
- JOHN M. M. MARTIN,—Ambulance Lectures. J. & A. Churchill, Lond., 1886.
- Medical Communications of the Massachusetts Medical Society. Vol. XIII., No. 5.
- T. WESLEY MILLS, M.A., M.D.,—Outlines of Lectures on Physiology. W. Drysdale & Co., Montreal, 1886.
- M. J. MOLONY, L.R.C.P.,—Rupture of the Perineum. Fannin & Co., Dublin, 1886.
- W. J. MOORE, C.I.E.,—A Manual of the Diseases of India. J. & A. Churchill, Lond., 1886.
- A. S. MORTON, M.B.,—Refraction of the Eye. H. K. Lewis, Lond., 1886.
- New Sydenham Society's Lexicon, Part XII. New Sydenham Society, Lond., 1886.
- W. S. PLAYFAIR, M.D., LL.D., F.R.C.P.,—A Treatise on the Science and Practice of

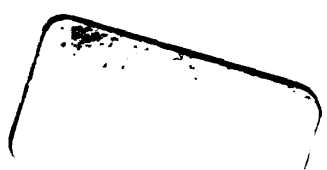
- Midwifery. 2 Vols. Smith, Elder, & Co., Lond., 1886.
- LOUIS STARR, M.D.,—Diseases of the Digestive Organs in Infancy and Childhood. Young J. Pentland, Edin., 1886.
- JOHN L. STEVEN, M.D.,—Practical Pathology. J. Maclehose & Sons, Glasgow, 1887.
- ALEX. STEWART, F.R.C.S.E.,—Our Temperaments. Crosby, Lockwood, & Co., Lond., 1887.
- HY. GAWEN SUTTON, M.B., F.R.C.P.,—Lectures on Medical Pathology. Baillière Tindall, & Cox, Lond., 1886.
- Transactions of the Clinical Society London, Vol. XIX. Longmans, Green & Co., Lond., 1886.
- Transactions of the Medico-Chirurgical Society of Edinburgh, Vol. V. Oliver Boyd, Edin., 1886.
- A. TUCKER WISE, M.D., etc.,—Alp Winter in its Medical Aspects. J. & Churchill, Lond., 1886.

PERIODICALS RECEIVED.

- Abstract and New Books,—Aug.
- Albany Medical Annals,—Sept., Oct.
- Alienist and Neurologist,—July.
- American Journal of Obstetrics,—Sept.—Nov.
- American Journal of the Medical Sciences,—Oct.
- American Lancet,—Oct., Nov.
- American Practitioner and News,—Sept. 18—Oct. 30.
- Annales d'Oculistique,—Sept., Oct.
- Annales de Dermatologie, etc.,—Sept., Oct.
- Annales des Maladies de l'Oreille, etc.,—Oct., Nov.
- Annales Medico-Chirurgicales,—Sept., Oct.
- Archives de Tocologie,—Sept., Oct.
- Archives Générales de Médecine,—Nov.
- Archives of Gynecology,—Aug.—Oct.
- Archives Mensuelles de Médecine et de Chirurgie Pratiques,—Oct.
- Archives of Pediatrics,—Aug., Sept.
- Asclepiad,—Nov.
- Australasian Medical Gazette,—Aug. 15, Sept.
- Berliner Klin. Wochenschrift,—Sept. 27—Nov. 22.
- Birmingham Medical Review,—Oct., Nov.
- Births, Deaths, and Marriages, Monthly Return of,—Sept., Oct.
- Do., Quarterly Return,—Sept.
- Boston Medical and Surgical Journal,—Sept. 9—Nov. 4.
- Brain,—Oct.
- British Medical Journal,—Oct. 2—Nov. 26.
- Bristol Medico-Chirurgical Journal,—Sept.
- Bulletin Général de Thérapeutique,—Sept. 30—Nov. 15.
- Canadian Journal of Commerce,—Oct. 8.
- Centralblatt für Gynäkologie,—Sept. 25—Nov. 20.
- Centralblatt für Chirurgie,—Sept. 25—Nov. 20.
- Chemist and Druggist,—Sept. 25—Nov. 20.
- Chicago Journal,—Sept., Oct.
- Dublin Journal of Medical Science,—Oct., Nov.
- France Médicale,—Sept. 22—Nov. 20.
- Gazette de Gynécologie,—Oct., Nov.
- Gazette des Hôpitaux,—Sept. 23—Nov. 20.
- Gazette Médicale de Paris,—Sept. 25—Nov. 20.
- Gazzetta Medica di Torino,—Sept. 15—Oct. 25.
- Glasgow Medical Journal,—Oct., Nov.
- Indian Medical Gazette,—Aug., Sept.
- International Journal of the Medical Sciences,—Oct.
- Journal de Médecine de Bordeaux,—Sept. 26—Nov. 21.
- Journal de Médecine de Paris,—Sept. Nov. 21.
- Journal of Anatomy and Physiology,—Oct.
- Journal of Cutaneous and Venereal Diseases,—Oct., Nov.
- Journal of Mental Science,—Oct.
- Journal of Nervous and Mental Diseases,—Sept.—Nov.
- Journal of the American Medical Association,—Sept. 11—Nov. 6.
- Journal of the British Dental Association,—Oct., Nov.
- Klinische Monatsblätter für Augenheilkunde,—Oct., Nov.
- Lima—Monitor Medico,—Sept.
- London Medical Record,—Oct., Nov.
- Medical Chronicle,—Oct., Nov.
- Medical Press and Circular,—Sept. 22—Nov. 10.
- Medicina Contemporanea,—Aug., Sept.
- Morningside Mirror,—Sept., Oct.
- New York Medical Journal,—Sept. 11—Nov. 13.
- New York Medical Library,—July.
- New York Medical Record,—Sept. 18—Nov. 13.
- Nordiskt Medicinskt Arkiv,—Nos. 15—21.
- Nouvelles Archives d'Obstétrique et Gynécologie,—Sept., Oct.
- Philadelphia Medical and Surgical Reporter,—Sept. 11—Nov. 6.
- Philadelphia Medical News,—Sept. 18—Nov. 6.
- Philadelphia Medical Times,—Sept. Oct. 30.
- Polyclinic,—Sept., Oct.
- Practitioner,—Oct., Nov.
- Progress Médical,—Sept. 25—Nov. 20.
- Revue de Chirurgie,—Oct.
- Revue de Thérapeutique Medico-Chirurgicale,—Oct. 1—Nov. 15.
- South African Medical Journal,—Aug.—Oct.
- Spitalul Revista Medicală,—Sept.
- St Louis Courier of Medicine,—Sept.
- Therapeutic Gazette,—Sept., Oct.
- Transactions of the Sei i Kwai,—Aug.—Oct.
- Virchow's Archiv,—Oct.
- Weekblad van het Nederlandsch Tijdschrift voor Geneeskunde,—Sept. 25—Nov. 20.
- Western Medical Reporter,—Aug.—Oct.

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